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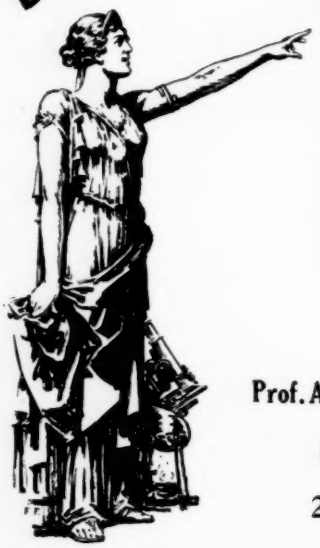

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CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

AN ADDRESS entitled Deviations from the Standard. By O. LEYTON, F.R.C.P.—(*Illustrated*) . 427

ORIGINAL ARTICLES.

Grave Familial Jaundice of the Newly-Born. By A. C. HAMPSON, M.R.C.P. 429

Arthritic Muscular Atrophy. By A. E. BERYL HARDING, M.R.C.P. 433

The Vernes Method of Estimation of Flocculation in Syphilitic Sera. By H. WANSEY BAYLY, M.R.C.S. 434

Iodised Tincture of Guaiacol in the Treatment of Synovial and Serous Affections. By JOHN MABERLY, M.R.C.S. 437

CLINICAL AND LABORATORY NOTES.

Dislocation of the Right Innominate Bone. By RICHARD WARREN, F.R.C.S.—(*Illustrated*) .. 438

Respiratory Action of Lobeline in the Dog. By SAMSON WRIGHT, M.R.C.P., and F. R. CURTIS, M.Sc., M.B.—(*Illustrated*) 439

Agranulocytic Angina. By L. W. BATTEN, M.R.C.P. 440

MEDICAL SOCIETIES.

Medical Society of London: Acute Intestinal Obstruction 441

Royal Society of Medicine: Section of Medicine: Allergic and Psychical Factors in Asthma 443 Section for the Study of Disease in Children: Work of a Rheumatism-Supervisory Centre 445

Medical Society for the Study of Venereal Diseases: Non-Venereal Affections of the Genitalia 447

Royal Academy of Medicine in Ireland: Section of Surgery: Rectal Narcosis with Avertin 448

REVIEWS AND NOTICES OF BOOKS.

Cytoarchitectonics of the Human Cerebral Cortex. By Prof. Constantin von Economo. Translated by Dr. S. Parker 449

Physics for Medical Students. By Prof. Sidney Russ, D.Sc. 449

A Photographic Study of Normal and Pathological Changes Seen with the Ophthalmoscope. By Arthur J. Bedell, M.D. 450

From Cloud to Sunshine. By Alfred S. Gubb, M.D. 450

Journal of Industrial Hygiene 450

LEADING ARTICLES.

THE PREVENTION OF INFLUENZA 451

WASSERMANN v. VERNES TEST 453

TENURE OF POSTS UNDER LOCAL AUTHORITIES .. 453

ANNOTATIONS.

The Royal Society 454

Reflex Muscle Atrophy .. 454

Parasite v. Host 455

Leucocytic Changes during Liver Therapy 455

A Pioneer in Sexual Psychology 455

The Salvage of Slaughter-House and Market Refuse 456

Public Health Nurses in Scotland 456

Sterilisation of the Feeble-minded 456

A Form of Splenomegaly Hitherto Undescribed .. 457

The Plague Menace in South Africa 457

CLINICAL INTERPRETATION OF AIDS TO DIAGNOSIS.

XXIV.—The Electrocardiogram. Part II. Abnormal Records. By CRIGHTON BRAMWELL, M.R.C.P.—(*Illustrated*).. 459

THE SERVICES.

The Health of the Army.. 458

Royal Naval Medical Service.—Royal Army Medical Corps 458

SPECIAL ARTICLES.

Problems of Maternity and Child Welfare: Group Meeting of the Society of M.O.H.'s 461

Scotland: The Voluntary Hospitals 463

Australia: A Cancer Campaign in Queensland 464

Medicine and the Law: Advertisements of Abortifacients 464

Drugs for Insured Persons: Appointment of an Advisory Committee .. 478

CORRESPONDENCE.

Operating for Appendicitis (Prof. Grey Turner) .. 465

Tumours of the Spinal Cord (Dr. J. G. Greenfield) .. 465

The Nucleus of the Cancer Cell (Mr. C. J. Bond) .. 466

Virilism Due to Hypernephroma (Dr. C. G. Murray and Mr. Graham Simpson) 466

Designation of White Blood Cells (Dr. H. S. Stannus) 466

The Injection Treatment of Varicose Veins (Prof. Archibald Young) 467

Ostocopos (Dr. A. Maude) 467

Tonsillectomy in Chronic Arthritis (Mr. A. B. Pavey-Smith) 468

The Legal Value of a Medical Referee (Sir G. Lenthal Cheatle) 468

Uræmia Simulating Acute Intestinal Obstruction (Mr. R. H. Paramore) .. 468

Spinal Anæsthesia in Abdominal Surgery (Mr. Percival P. Cole, Dr. W. Howard Jones) 468

Infection or Intinction. (Rev. S. Claude Tickell). 484

A King's Physicians (Dr. Francis C. Walker) 484

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics: Local Government (Scotland) Bill.—Hospitals and Relief of Rating 471

House of Commons; Rating of Voluntary Hospitals.—Workmen's Compensation.—Committee on Mental Deficiency.—Sick Leave among Welsh Women Civil Servants .. 475

PUBLIC HEALTH SERVICES.

Influenza 469

The Local Government (Scotland) Bill 469

Mental Hospital Reports: Some Scottish Hospitals 470

Infectious Disease in England and Wales 470

MEDICAL NEWS.

University of Oxford 477

Society of Apothecaries 477

University of London 477

Cumberland Infirmary 432

Work of Eye Hospitals 436

National Institute of Industrial Psychology .. 458

Donations and Bequests.. 471

College of Pestology 477

West London Hospital Post-Graduate College.. 477

West End Hospital for Nervous Diseases 477

M.O's. of Schools Assoc. .. 477

Courses for Diploma in Psychological Medicine.. 477

Post-Graduate Facilities in Manchester 477

Hospital Accommodation in the Irish Free State.. 477

Billroth Centenary Celebrations in Vienna 477

Municipal Sun Lounge 478

Stirling Royal Infirmary .. 478

Work of St. George's Hosp. 478

Scottish Hospitals 478

Endowed Dreadnought Beds 481

OBITUARY.

George Newton Pitt, F.R.C.P.—(*With portrait*) 478

Edward Leicester Atkinson, M.R.C.S. 479

Laura Stewart Sandeman, M.D.—(*With portrait*) .. 480

Denis Walshe, M.D. 480

John Logan Stewart, M.B., D.P.H. 480

Walter Aubrey Kidd, M.D. 481

George Vere Benson, M.R.C.S. 481

Helen Hunter Baillie 481

NOTES, COMMENTS, AND ABSTRACTS.

The Babies' Club 484

Standardised Yeast 484

The Cost of Scientific Books 484

Diary.—Appointments 482

Vacancies 483

Births, Marriages, Deaths.. 483

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ENGLISH workers recognise that the United States has made enormous advances in the study of medicine, and the authorities of the larger hospitals realise their responsibility in bringing these advances to the aid of the suffering poor in the wards of their institutions. To facilitate this they favour sending qualified men and hospital nurses, when opportunity offers, over to the States to carry out research work and study the methods there elaborated. When these visitors return they often bring with them sheaves of tables based upon the average or standard. These tables are of great value in the hands of the experienced, but those who have little opportunity of using them tend to exaggerate their value and raise them to an importance second only to those tablets which Moses brought down from Mount Sinai.

INDIVIDUAL PECULIARITIES.

I should like to draw attention to a deviation from the standard which in the past has led me and others astray and made us diagnose disease when none has been present. Sometimes, not always, it is easy to arrive at the average or standard, but extremely difficult to define what deviation from that standard is an individual peculiarity and to distinguish that from an illness. At first sight it seems to me that the more accurate the apparatus we possess the greater the difficulty. For instance, before we possessed clinical thermometers there must have been little difficulty in deciding whether a patient was feverish or not. The flushed face, the hot skin, the rapid pulse, and perhaps delirium, led the experienced physician to a definite conclusion. A short time ago I asked some of my colleagues at what temperature they thought pyrexia began; one replied, at 99·6° F., and another at 101° F. If the accepted definition of "truth" be "that which satisfies," then neither of my colleagues was speaking the truth. It would not be wise to say that a man was feverish because his temperature was 100·4° F. after exercise; as you know, the temperature of most of us will rise to that height if we run a mile. Nor would it be wise to say that a man with a temperature of 99·6° F. is not feverish in certain circumstances. These difficulties in definition give us food for reflection, but are comparatively simple when compared with individual peculiarities; most of us have met healthy people whose normal temperatures have been 97·6° F. or below. These are not arguments against the use of accurate instruments, but illustrate that, although it may be quite easy to define the normal average or standard, it is extremely difficult to decide what deviation from the standard is important.

Let me take one other illustration with which you are all well acquainted—the blood pressure. Perhaps it would be more accurate for me to say the pressure in a bag 4 in. wide which, when applied to the upper arm, will obliterate the pulse at the elbow. Most of the instruments in use to-day do not measure the systolic pressure, a fact which can be shown quite rapidly and clearly by applying a plethysmograph to the forearm; it will be found that the volume of the arm increases whilst the bag is supposed to be just obliterating the artery. What is the "standard blood pressure"? Some assert that when it is measured in millimeters of mercury it is the age in years added to 100. It is now more than 30 years ago that I first took a blood pressure measuring apparatus into a ward of a hospital, and during that time I have seen more and more importance attached to its readings. To-day many patients come to the physician stating that they are suffering from "blood pressure." When I am faced with this diagnosis I inquire whether the patient has any symptoms, or whether the diagnosis is based entirely upon the fact that the blood pressure apparatus records a pressure higher than the average. In the latter case many tests must be carried out before the diagnosis of disease is pronounced. I can call to mind a very wonderful old lady, the widow of England's most famous biologist, who for the latter ten years of her life had a systolic blood pressure measured by the Riva Rocci apparatus of over 280 mm. of mercury. The only symptom that developed was a minute hæmorrhage into one eye, and at the age of 87 she died from a condition which, as far as we know, has no relation to blood pressure. No doubt many of you have seen cases somewhat similar, and also the reverse; blood pressures of 125 mm. in patients of 70 years and more who have been hale and hearty and shown no evidence of myocardial disease. I suggest that there should be different standard blood pressures in different States, for it is difficult to believe that the same average pressure occurs in Alaska as in Georgia. An average blood pressure in a country that reaches almost from the Equator to the Pole seems to me to be of little more value than an average skin-colour for the inhabitants of the State of Georgia.

LOW RENAL THRESHOLD FOR SUGAR.

Many years ago the diagnosis of diabetes mellitus followed the reduction of Fehling's solution by the urine; later it was recognised that many substances besides dextrose reduced Fehling's solution, such as pentose, lævulose, lactose, glycuronic acid, and several others. It is doubtful whether many errors in diagnosis were made in these early days, because the urine at that time was only examined for sugar when thirst, polyuria, &c., suggested disease. Later the diagnosis of diabetes mellitus was reserved for true glycosuria, and then Saloman showed that individuals might pass dextrose in the urine without the sugar in the blood rising above the normal average. He called this condition "renal glycosuria," because his first few cases had albuminuria in addition. It is now recognised that the peculiarity is not of the kidney, and the name was replaced first by that of diabetes innocens, which is a bad name because there is no diabetes—in other words, no thirst and no polyuria. Many call the condition orthoglycæmic glycosuria, whilst I suggested the name of "negligible glycosuria," because it is not of importance. A very pronounced case of this peculiarity came my way several years ago. After the administration of 50 g. of dextrose by the mouth the sugar in the urine rose to over 10 per cent., although the sugar in the blood did not exceed 0·16 per cent. (Fig. 1). These numbers seemed so unusual that I thought it wise to have them confirmed at two laboratories by different observers. Not only is the renal threshold different for different individuals, but it varies from time to time in the same individual. Some time after a meal it tends to fall. A boy of 14 was given 50 g. of dextrose by the mouth after a meal containing considerable quantities of carbohydrate (Fig. 2). The concentration of the sugar in the urine rises whilst that in the blood falls, even if we take into consideration the residual urine of the pelvis of the kidneys and ureters.

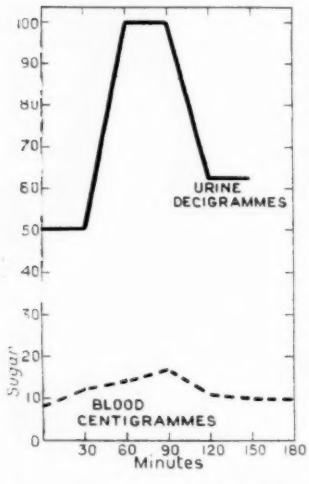
Many others have made similar observations, amongst them the distinguished expert on diabetes mellitus, Dr. J. E. Paullin of this city.

In my experience this peculiarity of a low renal threshold for sugar does not protect from diabetes mellitus. I have seen one case of a man with a low renal threshold develop diabetes mellitus, and amongst my cases of diabetes mellitus nearly 0·5 per cent. have a low renal threshold. Since Dr. E. P. Joslin has never seen diabetes mellitus develop

in an individual with a low renal threshold, there must be some difference in the people on the two sides of the Atlantic.

One case made a great impression upon me—a military man who was getting on in years and who developed thirst, lost weight, and had glycosuria and hyperglycæmia. When placed upon a diet and given insulin the concentration of sugar in his blood was kept between 0·08 per cent. and 0·16 per cent. throughout the 24 hours, but in spite of that he passed quite a lot of sugar in his urine. One day he said to me: "I believe you are giving me monkey gland, not insulin, because there is still sugar in my urine; but, undoubtedly, I am feeling very much better, and now, when I walk down Bond-street, I am interested in seeing what is under the hats." This patient had to be taught how to estimate the sugar in his blood in order that he might take an intelligent interest in his complaint.

FIG. 1.

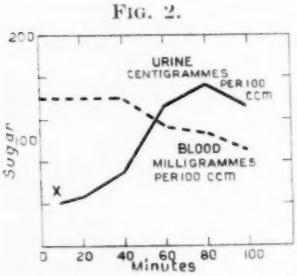


This peculiarity of low renal threshold for sugar seems to be inherited and may perhaps have some relation to diabetes mellitus. Many of the cases in which I have found a low renal threshold for sugar are children of parents with the same peculiarity, whilst four have diabetic parents. I have seen two sisters, daughters of a diabetic mother, one with true diabetes mellitus and the other with a low renal threshold for sugar. This family failing has been worked out very fully by Dr. Urban Hjärne.[1]

THE STANDARD RATE OF BURNING AND/OR STORING CARBOHYDRATE.

Many years ago R. T. Woodyatt, W. D. Sansum, and R. M. Wilder showed that after a fast of 24 hours a healthy man might have dextrose poured into his veins at the rate of 0·8 g. per kg. of body-weight per hour without glycosuria occurring. In my experience the average Englishman is not so competent a kataboliser of sugar. Although my experience of the intravenous method of introduction of sugar has convinced me that it is the more accurate, because it eliminates the error due to different rates of absorption through the intestinal tract, nevertheless I have been forced to make most of my observations after oral administrations, because many of my patients have never entered hospital. I have devised the following method for determining the rate at which sugar is burnt and/or stored.

FIG. 2.

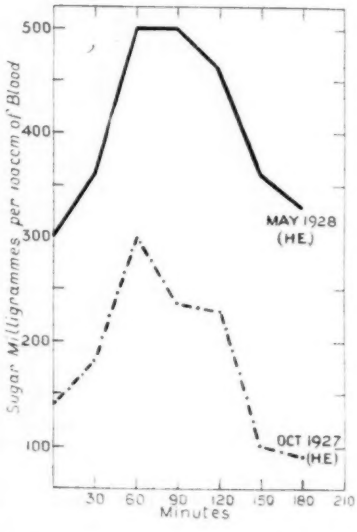


At (X) 50 g. of dextrose were taken by mouth after a meal containing carbohydrate.

After a fast of 12 hours the patient's blood is taken and the sugar in it estimated. Then he receives a definite dose of grape-sugar, dissolved in water and flavoured with lemon-juice. The dose depends upon the concentration of sugar in the blood after the 12 hours' fast; if it be low, 60 g. of sugar are given; if it be high, as little as 20 g. may be considered the best dose. If too big a dose be given, the test would be prolonged over too many hours. At intervals of half an hour or less samples of blood are collected and the bladder is emptied; all the urine is kept. The test in continued for at least three hours.

By estimating the sugar in the samples of blood, one is able to determine how long it has taken for the sugar in the blood to fall to 0·12 per cent., or to what it was before the sugar was administered. Having found this time, the urine passed during that period is mixed, measured, and the sugar and urea in it estimated. The quantity of sugar is subtracted from the dose given, whilst the amount of sugar which may have been liberated from the protein which has been broken down is added. This latter figure is arrived at by multiplying the urea excreted by 1·7. Some may criticise me adversely for adding this quantity, saying that it is far from certain that in the metabolism of a healthy man the carbohydrate part of the protein molecule is at any time converted into dextrose. I admit this, but meet the criticism by drawing attention to the fact that when the efficiency of carbohydrate metabolism is good, then the addition of this liberated sugar makes but little difference in the result, while, when the carbohydrate metabolism is poor, then there is no doubt that the greater part of the carbohydrate liberated is actually turned into dextrose.

FIG. 3.



Observations upon a number of healthy individuals and individuals with low renal threshold show that about 60 g. of dextrose can be stored and/or burnt per hour when administered by mouth. This method measures fairly accurately and is therefore comparable with the thermometer and sphygmomanometer. It allows one to note the progress of a patient by repeating the test at intervals, and for this reason, in my opinion, it is of very great diagnostic importance.

An untreated case of diabetes mellitus may go downhill rapidly.

Fig. 3 shows the curves from a patient who had a mild glycosuria and a low renal threshold for sugar, which was discovered when he attempted to insure his life shortly after an operation. I decided that the depression of his carbohydrate metabolism might be due to a recent anæsthetic, anxiety, and poor general health, and advised him to take a holiday and return for further examination in four weeks' time. He did not take a holiday nor did he present himself until six months had passed, and during that time the disease had made great progress. The carbohydrate metabolism efficiency had fallen from 55 per cent. to 24 per cent.

The question arises as to what fall in carbohydrate metabolism constitutes disease. Whenever a tissue alters slowly the time at which disease begins is not a fixed hour; different observers would give different times. Hyperthyroidism may progress quite far in a phlegmatic individual before it appears to become a disease, whilst a very slight increase in the activity of the thyroid gland in a "live wire" would show itself definitely and immediately. Many years ago the diagnosis of diabetes mellitus was comparatively easy because the disease was not recognised until thirst, glycosuria, and wasting were present; now the diagnosis is far from simple. Perhaps the time has come when the name of the disease should be changed, because the diagnosis

[1] See THE LANCET, 1928, i., 1077.

of the complaint may be made before there is thirst or polyuria and before there is persistent glycosuria. Hypoglycopyresis, although cacophonous, conveys the meaning that the power of burning sugar is depressed; when that depression is due to pancreatic disease the term subinsulism seems appropriate. At the present day the diagnosis of diabetes mellitus should be reserved for patients who either present symptoms or are unable to katabolise more than 25 per cent. of the normal average of sugar or are gradually losing the power of katabolising carbohydrate.

Illustrative Cases.

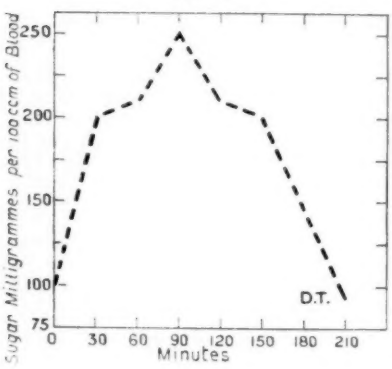
To show that these limitations are necessary I refer to cases which in the past would have been diagnosed as diabetes mellitus, but which, in my opinion, are simply cases of a congenital carbohydrate metabolism considerably below the average.

A woman of 31, had nursed her brother for diabetes mellitus; she examined her urine and found that it reduced Fehling's solution. She went upon a diet and, later, was sent to me for investigation. I found that her renal threshold was low, in the region of 0·16 per cent., but in addition to that the sugar in her blood rose to 0·20 per cent. after a lunch consisting of meat, vegetables, and ice-cream. After breakfast, including marmalade, the sugar in her blood did not rise above 0·12 per cent. The explanation of this, I think, may be pancreatic fatigue. When she was submitted to a carbohydrate metabolism efficiency test the sugar in her blood rose to 0·25 per cent. and took quite a long time to fall. She proved to have a carbohydrate efficiency of 33 per cent. (Fig. 4). This is considerably worse than that of the case of diabetes mellitus referred to above (Fig. 5).

Her brother was submitted to similar tests, and his carbohydrate metabolism efficiency was found to be a little lower than that of his sister. These two patients had not had symptoms of diabetes mellitus, but the male had had intermittent glycosuria for some years. After due consideration of the circumstances, which were quite exceptional, I came to the conclusion that I was justified in advising these two patients to eat and drink whatever they liked for a year and then be submitted to similar tests again. This was done, and their efficiency was found to be somewhat better rather than worse.

There are so many possible explanations for this improvement that it would be but a waste of time to discuss them here. I came to the conclusion that these patients were not suffering from diabetes mellitus, although their power of burning and/or storing sugar was much less than the average. If anyone prefers to take the view that the two patients were cases of mild non-progressive diabetes mellitus, which obviously needs no treatment, I shall be the last person to contradict him because his definition of illness will be different from mine, and it is useless for two people to argue when they do not attach the same meaning to one another's words.

FIG. 4.



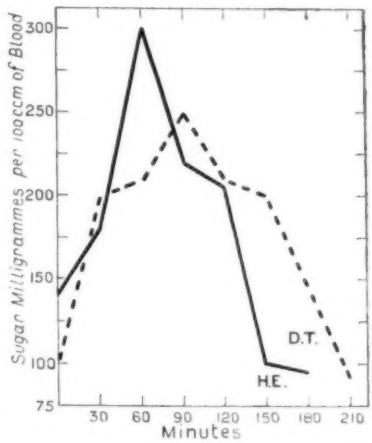
Having decided that these two cases were not cases of illness, I looked through my notes of cases and came to the conclusion that the condition is not so very rare, and that quite a number of patients are upon restricted diets when they might with impunity eat and drink whatever they liked. By no means, however, do I advocate departure from the rule: "treat every patient who passes dextrose in his urine as a case of diabetes mellitus until there is satisfactory evidence that the patient is not suffering from that disease."

CONCLUSION.

The following deviations from the standard, therefore, are not, as far as we know, illnesses, and yet have appeared to be: (1) pentosuria, lævulosuria, lactosuria, &c.; (2) low renal threshold for sugar; (3) temporary short hyperglycæmia following a meal; (4) low carbohydrate metabolism, probably congenital.

In the majority of diabetic patients metabolism permits a greater amount of fat in the food than carbohydrate. This is so common that many physicians have no time to study the exceptions; those that have time find that nearly 2 per cent. can utilise more carbohydrate than fat.

FIG. 5.



The study of so-called inborn errors in metabolism makes us realise that there are very many and varied deviations from the standard which can be recognised with comparative ease and are not diseases. I cannot help thinking that, although the metabolisms of all men bear a great similarity to one another, they differ in detail; I doubt whether our faces differ more than our metabolisms. One of the most convincing pieces of evidence that the metabolisms of different people are different exists in the fact that bloodhounds are able to track different people. If all the metabolisms of all men were identical the volatile substances elaborated would be identical, and dogs would be unable to distinguish people by their scent.

GRAVE FAMILIAL JAUNDICE OF THE NEWLY-BORN.

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UNDER this title, in 1920, an account was given by Sir Humphry Rolleston [1] of a condition occurring in successive infants of a family and usually proceeding to a fatal termination. The condition is rare, but during the last four years 18 cases, occurring in 17 families, have been under my care. Eight of these have been seen during the last nine months, and it appears probable, from the observations of colleagues, that the condition is more common than is generally recognised, advice not being sought because it is thought that nothing can be done. From the returns of the Registrar-General for England and Wales it appears that during the last seven years about 1800 infants have died of jaundice during the first four weeks of life, without obvious cause such as sepsis or obliteration of the bile-ducts.* I have

* It is probable that this figure errs in being too low, because deaths from such conditions as umbilical sepsis have been deducted from the figures for jaundiced infants, although only a proportion of these develop jaundice. In calculating the figure, an allowance has been made for cases of congenital obliteration of the bile-ducts, based on the known preponderance of males suffering from this condition. The figure given includes cases due to congenital syphilis but not certified as such; these

(*Continued at foot of next page.*)

recently seen three cases where treatment was commenced so late that the outlook appeared hopeless; of these two survived, but one died very shortly after treatment was commenced. My object in writing this paper is to draw attention to a form of treatment which has been successful in cases where it has been started sufficiently early. The condition shows considerable similarity to the physiological jaundice of the newly-born, and this is briefly reviewed for purposes of comparison.

Physiological Jaundice.

A slight degree of jaundice is often obvious within the first few days of life, particularly in premature infants. It is first noticed on the face and chest, then in the sclerotics, and finally in the hands and feet. Obvious jaundice is not seen before the second day, but it can often be rendered apparent earlier by carefully emptying the capillaries of blood, when the skin will be seen to be yellow. The depth of colour increases for a few days and then gradually fades, though in some cases, and particularly in premature infants, the coloration may last much longer. The first parts to lose the colour are usually the extremities, except that when the nails have been stained they may retain the colour for a considerable time, and the sclerotics also remain coloured for a longer period. The babies may be a little drowsy, but the condition is never fatal and has no pathological significance.

An examination of blood from the umbilical vein shows that at birth this always contains an excess of bilirubin.[2 3 4] The average quantity is 1 : 75,000, the normal in the adult being from 1 : 1,000,000 to 1 : 400,000. A similar amount has been found in babies born per vias naturales, and in those delivered by Cæsarean section. The condition is not, therefore, postnatal in origin, though the excessive production is continued during early postnatal life. Bilirubin can first be detected in measurable quantities in the blood at the fifth month of fœtal life and it increases in amount up to full term, the amount present in premature infants at birth being less, on an average, than in those born at full time. Attention has already been drawn to the fact that frank jaundice is much more likely to be present after birth in premature infants, and in them the postnatal rise of bilirubin in the blood is accentuated. After birth, in normal infants, the quantity of bilirubin in the blood rises, reaching a maximum on the third or fourth day, the amount in some cases being sufficient to cause definite staining of the skin. Thereafter, the bilirubin-content of the blood gradually falls, reaching the normal in about four weeks. In interpreting these results, stress must be laid on the presence of bilirubin in the blood before birth. It is not, therefore, in any way due to intranatal or postnatal changes of temperature, circulation, or nutrition. The amount of bilirubin in the blood of babies delivered by Cæsarean section or per vias naturales is approximately the same. It is fair to infer, therefore, that the degree of jaundice is not influenced by the actual parturition.

The sharp rise in the bilirubin-content of the blood after birth must be due to some factor associated with extra-uterine life, because it occurs both in premature and in full-time infants. That it is not due to feeding is shown by the fact that it begins before the infant is put to the breast, and the rise is approximately the same in infants fed on the breast and in those fed artificially. Two possible explanations suggest themselves, the first being that before birth only a fraction of the fœtal bilirubin is excreted by the liver, the remainder finding its way through the placenta into the maternal blood stream. After birth the liver may be some time in assuming its full function, and bilirubin would accumulate in the infant's blood. A similar delay in assumption of full function is found in other organs. The second possible explanation for the postnatal rise lies in the assumption of some maternal influence—hormonic, for example—restraining hæmolysis. After birth there is a fall in the hæmoglobin percentage, bearing an approximate relationship to the increase of bilirubin. Attempts have been made to explain the fall in hæmoglobin as being due to dilution. In rabbits the fall is accompanied by an increase in the amount of iron deposited in the liver, and there can be little doubt that in these animals active destruction of red cells is taking place. This is quite understandable; the percentage of hæmoglobin before birth is high, possibly in association with the active metabolism of the fœtus and the low percentage saturation of the fœtal blood with oxygen. Further, infants in which the jaundice is deepest usually show the greatest fall in hæmoglobin. Van den Bergh's test on the serum gives a positive indirect reaction only. These findings suggest that the jaundice is hæmolytic. Recently, the work of Murphy and Minot [5] has directed considerable attention to the liver as the source of an anti-hæmolytic agent, and it may well be that a hormone of this nature passes from the mother to the fœtus in utero, the sudden increase in hæmolysis after birth being due to the withdrawal of the maternal source of this substance. The passage of hormones across the placenta is one familiar enough in the case of other endocrine secretions as, for example, that of the thyroid. The blood of the infant, moreover, possesses certain points in common with that in pernicious anæmia, in which an extract from the liver is of undoubted value in overcoming the hæmolysis: this point will be more fully discussed in a later paper. Whether the delay in assumption be one of excretion, or in the production of an internal secretion, it seems probable that it is one in which the liver is largely concerned.

In view of the similarity of the processes occurring in prenatal and in early postnatal life, it appears probable that the difference is one of degree only, and is accounted for by separation from the mother. It seems unnecessary to attempt to account for the rise in the bilirubin after birth, as some have done, by reabsorption of bile from the alimentary tract (Knopfelmacher,[6] Thomson [7]), compression of bile-ducts by dilated liver veins (Weber [8]), cooling of the skin after birth (Lauret [9]), obstruction of the bile-ducts by mucus (Virchow [10]), or postnatal infection (Epstein [11]).

Grave Familial Jaundice.

This is a condition which occurs in successive infants of the same family. Sometimes one or two members of the family may escape and then it is usually the first-born which is normal. In one or two cases the second child has been slightly jaundiced and the colour has lasted rather longer than is the case with physiological jaundice. Occasionally a normal child may be found in a family in which both older and younger children have died of the disease. I have seen one case of twins, occurring in such a family, in which one twin was normal and the other jaundiced.

This condition has many points in common with physiological jaundice. The jaundice, however, usually shows itself on the first day, often within a few hours of birth; indeed, the infants may be born jaundiced. Thereafter it rapidly deepens until the skin becomes a deep bronze. Occasionally, however, the jaundice does not appear until the second day and the depth of colour attained, though considerable, may not be so intense. These cases may occur in

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(*Continued from previous page.*)

cases cannot be estimated from the returns. It also includes cases which may not be familial, but cases which I have seen in which jaundice has occurred within the first 24 hours after birth, and in which the jaundice was not due to the well-recognised causes, have without exception responded equally well to the treatment recommended in grave familial jaundice, though admittedly, when other members of the family have not died of the complaint, it is always possible that the infants might have recovered without treatment. The uniformly good results obtained, however, appear to justify the use of the statistics quoted above.

I should like to acknowledge the courtesy and great assistance extended to me by Dr. A. J. Thompson, of the Registrar-General's Office.

families in which the other infants have shown the typical degree of coloration, and do not appear to offer a better prognosis than the others. The infants are usually drowsy, take the breast poorly, and lose weight. The liver and spleen, as a rule, are not enlarged at birth, and often do not become enlarged during the course of the disease. In others, moderate enlargement of the liver and spleen may occur, particularly of the former. The enlargement, however, does not appear to be so great and the liver is not as hard as in cases of obstruction of the bile-duct. The stools are normal in colour, but the bowels tend to be costive. In all the cases I have seen the urine has been dark and has contained urobilin —and usually bilirubin—in excess of the amounts frequently found in the newly-born. Hæmorrhages do not form a conspicuous feature of the disease, though they may occur near its end, particularly in the subcutaneous tissues over the forehead, where they are not to be confused with the small spider-nævi which are common in all jaundiced babies and which rapidly disappear with the subsidence of the jaundice. In one case seen recently on the seventeenth day there was obvious melæna shortly before death.

The main features during the course of the disease are an increasing jaundice, increase in drowsiness, and loss of weight. Death usually occurs within three weeks, commonly within 14 days, and frequently with convulsions. In other cases, the end is extremely sudden. In some cases there have been attacks in which the infant has assumed a peculiar shade of greyness mixed with the icteric tint. In these attacks respiration becomes very shallow and slow and the heart-beat may be barely perceptible. They are presumably due to medullary failure and strychnine has been successful in my cases. In all the cases in the present series the parents have been in good health, the Wassermann reaction has been negative, and the pregnancies have been uneventful. In a number of cases the metabolism of the mother has been carefully studied before and during the pregnancies and no abnormality has been detected.

The condition is illustrated by the following case:—

The mother was married in 1908 at the age of 20. The first two children died in the first few weeks of life in convulsions. They were said to have been jaundiced, but the history is vague. The next child was born after six and a half months' gestation and was jaundiced; it only survived for three hours. The next child was jaundiced soon after birth, but recovered; this child is living. The next pregnancy resulted in a miscarriage at four months. Of the remaining seven pregnancies, all had come to full term; three had resulted in stillbirths, the children being born jaundiced. The remaining four were not obviously jaundiced when born, but jaundice developed a few hours after birth and rapidly deepened. The infants were very drowsy and died within periods ranging from three to eight days. The Wassermann reaction of parents and children was negative. On one occasion the van den Bergh reaction on the mother's blood immediately before labour was reported to be slightly positive, but this is usual in normal pregnancy; the mother was certainly not obviously jaundiced, and probably the finding has no significance as far as the present condition is concerned. At post-mortem no obvious cause for the jaundice could be ascertained.

Ætiology.

The disease closely resembles the physiological jaundice of the newly-born. A further delay in the assumption of hepatic efficiency would result in a greater degree of jaundice in the infant. Recent work on animals suggests that the products of the destruction of red cells may be extremely toxic. Intraperitoneal injections of small amounts of hæmolysed red cells in adult rabbits appear to produce little obvious effect; the injection of a proportionate amount in young, growing animals invariably inhibits growth. In the pregnant animal it leads to the death of the fœtuses in utero, usually with abortion; in two cases, in which the pregnancy was early, the fœtuses were retained in utero, with the formation of a mole. This finding will be more fully discussed in another paper; it is only mentioned here to show that the products of red cell destruction are toxic, particularly in young animals. The hæmolytic nature of the disease is supported by the fact that the infants become progressively anæmic. The accumulation of the toxic products of hæmolysis, inadequately excreted by the liver, would sufficiently account for the symptoms.

Diagnosis.

In the 18 cases discussed in this paper the parents have been apparently healthy and there has been no abnormality during the pregnancy. There are other cases, which I have not included under this disease, in which there is evidence of maternal toxæmia. In three published cases, those of Nason,[12] Tylecote,[13] and Rolleston,[14] the mothers had recurrent jaundice during the pregnancies, and during the last year I have encountered a case with a similar history. This patient also had albuminuria with œdema during her pregnancies, and on several occasions had fits. When I saw her she was not pregnant and the urine showed no abnormality. In two other cases (Smith,[15] and Ritchie[16]) the mother was jaundiced during one of the pregnancies. Jaundice in the infants is only a symptom, and it appears probable that there are many causes. Cases in which there is definite maternal toxæmia appear to belong to a different group from those which concern this paper, and deserve a separate name to differentiate them from other familial jaundices of the newly-born, which also have a grave prognosis. Even in these other cases, however, it appears to be quite as justifiable to regard the maternal toxæmia as fœtal in origin, as to regard the fœtal condition as due to the toxæmia of the mother.

Familial acholuric jaundice may give rise to mild jaundice in the early days of life but, as Chauffard[17] says, "the patients are more icteric than sick." I have notes of three families, however, in which all the children died during the first few weeks of life after a progressively increasing jaundice. An examination of the fragility of the red cells to hypotonic salines shows a markedly diminished resistance, and one of the parents is almost certain to exhibit a similar phenomenon. In each of the three cases mentioned, the red cells of the mother showed an increased fragility. In this condition the red cells are also smaller in diameter than the normal.

Congenital Obliteration of the Bile-ducts.—This condition, often occurring in several members of the same family, is usually associated with complete obliteration of the bile-duct, though the degree is variable. The liver shows evidence of biliary cirrhosis, supposed by Thomson[18] to be secondary to the biliary stasis. Rolleston[1] considers that the cirrhosis is due to maternal toxæmia, "followed by a descending obliterative cholangitis," while Wyard[19] thinks that the cholangitis is ascending from the duodenum, due to irritation set up by swallowed liquor amnii. In one of McGibbon's[20] cases of grave familial jaundice there was obstruction, though not obliteration, of the biliary papilla. In two of my own cases of grave familial jaundice there was in each family a history of one case being diagnosed post mortem as obliteration of the bile-ducts, but I have been unable to obtain further particulars. The two conditions are easily confused and the observation may be without significance. In grave familial jaundice both sexes appear to be equally affected; in obliteration of the bile-ducts, according to Thomson,[18] boys are affected more often than girls. Jaundice usually manifests itself about the second day and is progressive. On the other hand, it may not appear until the second or third week. The stools are white or only slightly pigmented and the urine is dark, owing to the presence of bile. Hæmorrhages often occur subcutaneously or from the mucous membranes. The child may appear quite fit until late in the disease. On the other hand, I have seen one case, verified at post-mortem, in which death occurred on the fourth day. In this condition the liver is usually considerably

enlarged and hard. The main points of distinction from grave familial jaundice are the colour of the stools and the size and hardness of the liver.

Congenital syphilis may rarely produce a pericholangitis with enlargement of the liver and spleen. Jaundice occurs early and is progressive, and the infants are usually extremely cachectic. The stools are pale and the urine is dark. Hæmorrhages occur, and though the liver is enlarged it is not usually so hard as in congenital obliteration of the bile-ducts. Other evidence of syphilis may be found in the infants or in the parents.

Infective jaundice is associated with other infective processes, either at the umbilicus or in the intestines. At the onset of jaundice the infant is usually obviously ill and the temperature is raised. It is wakeful and irritable and refuses its food. There is often cyanosis. The condition is, of course, not familial, though in cases of jaundice occurring for the first time in a family it is a condition which should be considered. The diagnosis is usually obvious.

Prognosis.

Of 130 cases collected by Rolleston, 100, or 77 per cent., proved fatal. In the families of my own cases, out of 90 untreated infants, 75, or 83 per cent., were fatal. In the combined series, 80 per cent. were fatal. With treatment, the prognosis appears to be good. Of 18 cases occurring in 17 families, 17 have recovered, and the eighteenth was seen so late in the course of the disease that it appears to be without significance, except to emphasise that treatment should be started early. Of the 17 which have recovered the eldest is now nearly four years of age, and all appear to be healthy children. This agrees with the impression of other writers on the subject, that when recovery occurs it is nearly always complete, though Morris [21] gives an account of a girl who lived for four and a half years, being jaundiced for practically the whole time.

Treatment.

If the suggestions given as to the ætiology of the disease be correct, treatment should be directed to the prevention of hæmolysis. In discussing physiological jaundice it was suggested that some substance was present in the mother's blood which was lacking in that of the infant, and in a former paper [4] on this subject an account was given of in vitro experiments on the effect of serum in inhibiting hæmolysis. These experiments confirmed the suggestion that the infant was short of an anti-hæmolytic agent, which could be given by injecting the mother's serum. It appeared, if grave familial jaundice differed only in degree from physiological jaundice, that if hæmolysis could be retarded for a time, the prognosis ought to be that of physiological jaundice, and therefore good.

The effects of treatment by serum are, perhaps, best illustrated by continuing the history of the case recorded above:—

> The thirteenth pregnancy of this patient was uneventful. A male infant was born at full term. Jaundice developed within a few hours of birth. On the second day the infant was becoming very drowsy and very deeply jaundiced; the urine was dark and contained bile. On the third day the mother remarked that the child "was going just like the others." In view of the almost certain fatal termination and of the experimental findings referred to above, it appeared reasonable to give the child injections of serum, in the hope of supplying a missing factor. On the evening of the third day, 10 c.cm. of the mother's serum were injected intramuscularly. A similar dose was given on each of the two following days. Even after the second dose the child appeared to have improved. By the ninth day the bilirubin content of the blood had fallen to the level normally found in a child of this age. On the tenth day the jaundice was obviously fading; the child had a lusty cry, was not so drowsy, was feeding well, and had stopped losing weight. Following the advice given by Rolleston, artificial feeding had been used. Breast-feeding was now commenced, and from this time onwards improvement continued. The child is now nearly four years of age and recovery appears to have been complete.
>
> The patient has recently had a fourteenth pregnancy; the infant again became fairly deeply jaundiced, but treatment was commenced earlier and the colour disappeared more rapidly.

In subsequent cases the infants have, as far as possible, been fed on the breast throughout.

In gauging the amount of serum required, the best guide appears to be the amount of bilirubin in the blood of the child. Serum has been given intramuscularly into the buttock, in daily doses of 5-15 c.cm., according to the condition of the child. The injections have been continued until the bilirubin content of the plasma has fallen to approximately 1:150,000. The amount required has varied from 30 to 60 c.cm. The serum is very rapidly absorbed, and no ill-effects have been observed. Serum, and not whole blood, should be used for two reasons: (1) red cells are not rapidly absorbed and the injections would give rise to hæmatomata, with their attendant risks of sepsis, which would almost certainly be fatal; and (2) absorption of hæmolytic products would almost certainly aggravate the condition.

Summary.

In the condition described as grave familial jaundice, the yellow colour usually appears on the first day; the temperature is normal; the stools are normal in colour; the urine contains excess of urobilin and frequently bilirubin; the liver and spleen are not usually enlarged. In untreated cases the condition is progressive and the prognosis is bad; on the other hand, in 17 out of 18 cases treated with serum the infants have recovered; in the eighteenth case treatment was only commenced on the seventeenth day, a few hours before death, when the child already appeared moribund. The case cannot be regarded as one in which the treatment has failed, but serves to emphasise the gravity of the condition and the necessity for early treatment.

In conclusion, I should like to stress two points: (1) Jaundice occurring within the first 24 hours after birth should always be regarded as serious. (2) In cases in which there is a familial history of infants dying of jaundice, even if the jaundice does not appear until the second day, it should be regarded with equal gravity.

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ENLARGEMENT OF CUMBERLAND INFIRMARY.—A new out-patients' department of this Carlisle hospital, which has cost over £33,000, has recently been opened. It forms the first part of a series of extensions which include two new wards, enlargement of the nurses' home, the reorganisation of the administration block, and the provision of a pathological department.

AN INVESTIGATION INTO THE CAUSE OF ARTHRITIC MUSCULAR ATROPHY.

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In a previous communication[1] an account was given of some experiments which had been undertaken with a view to investigating the muscle-wasting that accompanies arthritis. A review was given of the bibliography[2] and the various theories that have been advanced. Experiments were planned which should throw some light on the metabolic activity of the muscles, and it was found that there were marked differences in this respect between muscles which had wasted as a sequel to arthritis and those in which the atrophy resulted from disuse. In the former there is a great increase in the oxygen consumption, the average oxygen used by atrophied muscle being as much as 8·3 c.mm. per 1·0 g. muscle for one minute, as against 4·6 c.mm. for the normal. In the muscles which were wasted from disuse (immobilised in plaster-of-Paris) the oxygen use was only 5·1 c.mm. per g. per minute. It was suggested that the increase is the result of an increased katabolism, the atrophy resulting from failure of the reparative powers to keep pace with this undue tissue breakdown. In pure disuse atrophy the almost unaltered oxygen consumption probably means that there is no increased katabolism, but simply an impairment of the synthetic powers on the affected side. The suggestion was put forward that arthritic wasting might be due to an increased number of impulses (or abnormal impulses) arising in the joint, making the spinal centres abnormally excitable—i.e., that there is a reflex basis for the wasting. In pure disuse, on the other hand, there is a reduction of afferent stimuli, for when a joint is immobilised proprioceptive impulses, which depend on movement for their initiation, will be in abeyance. The wasting under these circumstances results from partial suppression of reflex excitation; the spinal centre has in no way been interfered with, and re-establishment of activity finds it able to resume its functions in the regular way.

Method of Experiment.

To put the question to the test, it was decided to cut the posterior nerve roots carrying the afferent nerves from the knee extensors of the left hind-leg and to allow of complete degeneration before setting up an arthritis. The right side was left intact to serve as a control. The animals used were rabbits and cats. Great difficulties were experienced in setting up an arthritis in both series, and the methods employed in the case of rabbits have been fully described in a previous paper.[2] Wasting was constant in every case of arthritis, but the degree varied considerably, and was not related to the duration of the arthritis. The cats were given a preliminary injection of isopral and hedonal, 1·15 c.cm. per kg. as recommended by Lambert,[3] and subsequently anæsthetised with open ether. Laminectomy was done, and the lower three lumbar and upper two sacral posterior nerve roots were cut on the left side. All the animals were very ataxic for the first 10–14 days, then gradually learnt to control their deafferented limbs. After one month injections were made into both knee-joints. The following organisms, obtained from the Lister Institute, were used for this purpose: *Streptococcus infrequens*, *S. salivarius*, and *Diplococcus rheumaticus*, also a strain of the scarlet fever streptococcus, obtained from the Wellcome Research Laboratories. No constancy of reaction was found. Sometimes arthritis followed the injection, sometimes there was no result. Repeated injections of the same organism, as used by Kniest Faber,[4] and of different organisms were then tried, but with similar periodic success. An attempt was therefore made to set up a preliminary irritation by injecting cantharidine 1/200 in acetic ether, iodoform, or eucalyptus 1/14 in iodoform, and giving subsequent injections of organisms. Again arthritis sometimes followed, but in other animals there was no reaction. The following series consists only of the animals which showed clinical enlargements of their joints. There was no structural fixation of the joints, and all the animals used their arthritic limbs freely, and appeared to suffer very little pain.

Results.

Three sets of controls were made: (*a*) section of posterior roots only, to show that no atrophy results from deafferentation; (*b*) arthritis set up in left joint only, to show ratio of wasting to body-weight: (*c*) bilateral arthritis set up, with no preliminary nerve section, showing that an approximately equal wasting can be produced. The animals were kept alive 8–10 weeks, and their weight was taken at the beginning and end of the experiment.

TABLE I.—*Controls.*

(A) *Section of left posterior roots, showing absence of wasting due to section.*

Cat.	Total weight of animal in g.	R.Q.	L.Q.	Expressed as percentage of body-weight.	
				R.Q.	L.Q.
I 1	2150→2250	30·09	30·50	1·33	1·35
I 2	2200→2200	30·39	30·20	1·38	1·37
I 3	2500→2080	25·58	26·50	1·23	1·22
I 4	2700→2700	33·81	33·59	1·25	1·24
I 5	2670→2370	31·61	32·00	1·33	1·34
B 2		34·39	34·00	—	—
K	—	31·4	30·9	—	—

(B) *Organisms or chemicals into left joint only, showing degree of wasting.*

D	2200→1825	25·98	19·91	1·42	1·09
G	2670→1950	21·49	18·01	1·10	0·92
Z 2	2700→2400	30·85	20·12	1·28	0·83

(C) *Organisms or chemicals into both joints—i.e., showing equal wasting.*

B 1	1950→1950	14·29	16·50	0·76	0·84
Z 4	1737→1750	15·96	16·90	0·91	0·97
M	3000→3000	34·8	34·5	1·16	1·15
I 6	2876→2800	26·9	26·2	0·96	0·93

R.Q.—Right quadriceps. L.Q.—Left quadriceps.

Table I. (A) shows that in cats the average weight of the quadriceps extensor femoris is between 1·22 and 1·38 per cent. of the total body-weight. In (B) the degree of wasting is such that this percentage is reduced to 1·09–0·83 per cent., and this is again shown in (C) where even lower figures were obtained —0·76 and 0·84 per cent. The wasting on each side was very similar.

TABLE II.—*Experiments.*

Section of left roots, organisms, or chemicals into both joints – showing reduction of wasting on deafferented side.

Cat.	Weight of animal at beginning and at end of expt.	R.Q.	L.Q.	Expressed as percentage of body-weight.	
				R.Q.	L.Q.
H	2750→2650	26·60	35·63	1·00	1·34
E	2200→2000	15·01	22·90	·75	1·14
F	3000→2850	27·70	33·68	·97	1·18
J 1	2000→2000	20·10	27·15	1·00	1·35
L	2570→2570	24·59	33·51	·95	1·30
J 5	2573→2950	34·52	38·95	1·17	1·32
J 3		28·5	35·5		
J 4	2750→3323	37·5	35·8	1·12	1·07
I 7	2100→2044	23·1	21·7	1·13	1·06

Nine experiments were then made on laminectomised animals, and it is clear that the result of deafferenting a limb is to prevent the wasting almost entirely. (Table II.)

The right quadriceps, the nerve-supply of which was intact, showed the usual degree of wasting. The left quadriceps in four of the experiments was 1·3 per cent. of the body-weight—i.e., within normal limits—in two 1·14 and 1·18 per cent. The two low values may be due to the fact that the animals were in very poor condition and had had severe degrees of arthritis. Experiments J 4 and I 7 do not fit in with the series at all, and no adequate explanation of them has been found. In both a bilateral arthritis was established of approximately equal intensity, but despite the fact that the left legs were deafferented the wasting was more marked in the left quadriceps than in the right. The animals were in good condition and the arthritis of average degree.

These results show that the wasting is due to some reflex cause, but before investigating this point further it seemed advisable to find out whether a similar basis could be demonstrated in disuse atrophy. Laminectomy was again done on cats, and after 4–6 weeks, when the skin was soundly healed and the animals fairly steady on their legs, the left leg was immobilised in plaster-of-Paris. The leg was completely flexed at the hip, the knee being extended and the bandage, after several turns round the leg below the knee, was then taken round the body, the whole leg being then included in the subsequent bandaging. The leg was thus carried parallel with the body as if in a sling. The animals soon learnt to walk on three legs and, as the foot and leg were well padded with cotton-wool, no swelling took place. After immobilisation for 6–8 weeks the animals were killed and the knee extensors dissected and weighed. The following figures show clearly that no reduction of the wasting is effected by deafferentation.

TABLE III.

Cat.	Total body-weight at beginning and end of expt.	R.Q.	L.Q.	Expressed as percentage of body-weight.	
				R.Q.	L.Q.
1	→3165	43·0	31·8	1·35	1·00
2	2600→2534	37·8	25·8	1·49	1·01
3	2650→2736	37·2	28·3	1·34	1·03
4	3580→3189	39·2	30·0	1·22	0·94
5	→2600	35·0	25·4	1·34	0·97

Clearly, then, no reflex cause can be invoked in explanation of disuse atrophy. This was not altogether unexpected, in view of the metabolic differences already referred to.

Discussion.

It is suggested that the sequence of events is as follows. The presence of the arthritis provides an abnormal stimulus to the afferent nerve endings, as a result of which the corresponding spinal centre becomes unduly excitable. This causes an abnormal discharge of impulses to the muscles, and results in a condition of heightened activity, which is evidenced by the raised oxygen consumption. This state of affairs might last long after the original cause had subsided, and would account for those cases quoted by Charcot,[5] in which muscular wasting was present for as long as one year after the initial injury.

Lippmann and Selig,[6] working on rabbits, found that the atrophy following arthritis closely resembles that following nerve section and tenotomy. They point out that "the muscle atrophies that follow tenotomy and nerve section are due to cessation of muscle function; are therefore true disuse atrophies. The atrophy that follows experimental arthritis is preceded by muscle relaxation—muscle collapse—and the subsequent course is the same as that which obtains following tenotomy and nerve section. It is therefore reasonable to conclude that arthritic atrophy is also a disuse atrophy. The muscle disuse, however, is not caused by voluntary immobilisation or external fixation but is due to muscle collapse. Hence the theoretical and experimental evidence leads to the inference that although arthrogenic atrophy must be considered a disuse atrophy, it is not due to immobilisation, but is caused by a reflex mechanism." That there is some reflex mechanism underlying the atrophy is proved by my experiments, but the suggestion that this is reflex muscle collapse is not tenable in view of the fact that the knee-jerk was present and active in all my animals with an intact reflex arc, and the arthritic limbs were as freely used as the sound. Furthermore, these same observers found practically no atrophy as the result of immobilisation. They conclude that "the atrophy obtained by others with experimental immobilisation was caused not by the fixation itself; it was no doubt due to extraneous factors, injury, excoriation," &c. I would like to emphasise that in no single animal of mine which had been in plaster-of-Paris was there any injury, excoriation, swelling, or other evidence of impaired blood-supply. It is therefore hard to understand or to accept the above findings.

I think my experiments raise more questions than they answer, but one thing is clear: two forms of muscular atrophy have been differentiated, one reflex and one due to disuse, and for the latter there is no reflex basis. The nature of the reflex mechanism underlying the former is still unsolved.

I have to express my sincerest appreciation to Prof. C. C. Choyce for his unfailing interest and assistance in the work, which has been done under his direction. I have also received constant help from H. E. Roberts, who has given me many suggestions as to the making up of the solutions employed, and other technical points.

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THE VERNES METHOD OF ESTIMATION OF FLOCCULATION IN SYPHILITIC SERA.

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NEARLY twenty years ago I published a note in THE LANCET on the then new "serum diagnosis of syphilis,"[1] and in the two subsequent years further notes[2 3] on the value of the Wassermann reaction for the control of treatment. In a small volume, published in 1912, I emphasised the non-specificity of the reaction, and pointed out that the value of the test, though great, was relative and not absolute, and that positive reactions occurred apart from syphilis.[4] Six years later[5] I uttered a warning that the value of the Wassermann reaction, both for diagnosis and control of treatment, was limited, and that what was necessary to ensure uniformity of result was a standardisation of reagents so that the variants and the personal factor were reduced to a minimum.

The Vernes test eliminates variants and reduces the personal factor, and therefore (always providing that the Vernes photometer is an instrument capable of accurate measurement of small differences in optic density) must theoretically be acknowledged as a possible advance on the Wassermann test. The further evidence in regard to the Wassermann reaction that has accumulated during the last ten years has not altered my opinion. During this decade I have occasionally recorded further instances of contradictory Wassermann reactions at short intervals of time and without intervening treatment, and positive

Wassermanns in cases where no confirmatory evidence, either historical or clinical, could be obtained.[6]

During the last 20 years I have reiterated my opinion that while the Wassermann reaction was a good servant it was a bad master, that the test was clearly not specific, that there appeared no logical reasons why other similar chronic infections should not produce a like reaction, and that, therefore, no one should be dogmatically branded as a syphilitic on the evidence of a positive Wassermann reaction unsupported by any other historical, clinical, or pathological evidence.

Records at St. John's Hospital.

By the courtesy of Dr. E. Ofenheim I have recently been given the opportunity of comparing the results of tests applied to the sera of syphilitics by Wassermann's method and by the syphilometric method of Vernes which Dr. Ofenheim has carried out in his laboratories at St. John's Hospital, Lewisham, for the last three years.

I examined 863 reports. The Wassermann reports were: negative, 464; positive, 368; doubtful, 31. Of these 863 tests, 635 (74 per cent.) showed complete agreement between the two methods; that is, the positive Wassermanns showed Vernes figures of "7" or over, the negative Wassermanns showed Vernes figures below "3," and the doubtful Wassermanns showed Vernes figures between "3" and "7." The remaining 26 per cent. of cases were composed as follows:—

W.R.	negative	and	Vernes	doubtful	9 per cent.
„	positive	„	„	negative	7 „
„	„	„	„	doubtful	5 „
„	negative	„	„	positive	2 „
„	doubtful	„	„	negative	2 „
„	„	„	„	positive	1 „

Most of the "Wassermann positive, Vernes negative" results were cases which had received treatment and in which there was no clinical evidence of infection when these tests were taken, and the charts seemed to show that the Vernes test registers reaction to treatment much more delicately than the Wassermann, but that a Vernes negative during treatment can only be taken as showing that the treatment is producing a definite effect, and is no indication whatever that cure has been effected. If, however, treatment has not been received recently the Vernes negative appears to be of greater diagnostic value than the Wassermann negative. If the "under treatment Vernes negative Wassermann positive" cases and the "doubtful" in both tests are eliminated, the cases of definite divergence in diagnosis by these tests are reduced to 4 per cent. in one-half of which the Wassermann is positive and Vernes negative, and in the other half the Wassermann is negative and the Vernes positive. In these cases clinical evidence seems to support both tests about equally.

Simplicity and Uniformity of the Vernes Technique.

When once the optical apparatus has been accurately adjusted—a matter requiring patience and experience—the reading of the illuminated scale of optic density of the various sera on Vernes photometer is so simple that the personal element is almost eliminated; much to my surprise, my very first readings coincided almost exactly with those obtained in Dr. Ofenheim's experienced hands. It is essential to maintain the room and water-bath temperatures constant at the prescribed degree, and to mix and measure the reagents efficiently and accurately, so that a comparatively small and undisturbed room is necessary, and the test can only be satisfactorily carried out in a well-equipped laboratory.

The Wassermann "home-made" reagents must necessarily vary with the different laboratories, and from time to time in the same laboratory, as a really accurate titration of these reagents is often impossible and generally impracticable. In the Vernes test all the variant Wassermann reagents (locally prepared alcoholic heart extract, complement, and hæmolytic system) are dispensed with, the only reagents used consisting of Vernes's centrally prepared horse heart extract, absolute alcohol, and doubly distilled water. In the Vernes method, therefore, there is absolute uniformity of reagents, whether the test is carried out at the Vernes prophylactic institute, Paris, or in other laboratories in France,[7 9], England,[12 13] America,[8] Italy,[11] Argentine,[14] Denmark,[10 15] Switzerland, or Germany, where a large number of tests have now been recorded. Not only are the reagents constant, but the temperature, the rate of mixing reagents, and the mechano-optical method of recording the degree of optic density are constant. The result is read on a scale which permits little personal error. The amount of flocculation or optic density is not estimated by the human vision, nor is it recorded in agreement with a self-appointed scale by the human brain. The difference between the methods of arriving at a degree of flocculative optic density with the Vernes photometer and with naked-eye estimation is somewhat analogous to naval range-finding with a modern instrument, as compared with the old-time human judgment based on vision. Neither the Wassermann nor the Vernes test can be claimed as pathognomonic, as in both tests a heart extract is used which is not a true syphilitic antigen. In the Vernes test, however, this alcoholic extract of horses' heart is constant, as it is accurately prepared in bulk in Vernes's laboratories, and distributed in small phials to all laboratories undertaking the Vernes test.

All the laboratories that have investigated Vernes's method appeared to agree that the Wassermann reaction and the Vernes test accord in the great majority of cases. The point which has not yet been finally and definitely established is which of these tests is the more reliable where they differ. The large amount of evidence that is accumulating seems, however, to suggest that the Vernes test may ultimately prove the more reliable, and that the occasions when the Vernes tests contradict themselves, or are at variance with clinical history, may be less frequent than with the Wassermann reaction. The final verdict on the comparative value of the Wassermann and the Vernes tests lies in the future, and will only be arrived at after an immense number of reactions to both tests have been recorded in the laboratories of the world. There seems little doubt, however, that the Vernes test merits serious consideration, and it seems a matter for regret that St. John's Hospital, Lewisham is, as far as I know, the only laboratory in England (with the quite recent exception of St. Mary's Hospital, Paddington) where this test is being investigated.

It is claimed that the Vernes method is not only applicable for serum but is also of value with the cerebro-spinal fluid, on which it can be used in two ways, for the estimation either of what we may call the Wassermann substance or of the albumin content.

In this note I do not propose to discuss either the theory or the technique of the Vernes test, which are recorded elsewhere,[7 8 12] but I wish, as a student of the serum reaction of syphilis for 20 years who has always tried to maintain a strictly unbiased view, to draw attention to the data in regard to the Vernes test, and to stimulate further research on it in Great Britain. The clinician alone can decide which of the tests has the greater value, either for diagnosis or the control of treatment, and he can only decide after prolonged and comparative experience of both tests in relation to the clinical progress of the case. So far, the clinician has been afforded little opportunity in this country of forming his own opinion. The charts I have examined at St. John's Hospital, Lewisham, and those published in the literature, seem to suggest that those cases which exhibit contradictory or doubtful Wassermanns show less contradiction or doubt with the Vernes test. The published records of the Vernes test also seem to show that different individuals react very differently to arsenobenzol, mercury, and bismuth, and that a fall in the Vernes optic density figure may occur more readily in one patient with arsenobenzol, in

another with mercury, and in a third with bismuth; also that the downward curve of the Vernes optic density chart may often be hastened by a change of treatment. They appear also to confirm clinical opinion that arsenobenzol is perhaps the least potent drug for the treatment of central nervous syphilis. Curiously enough, some of the Vernes test results suggest that the mercury pill, the stand-by of our fathers, is of quite considerable value in some cases and hardly deserves the contempt that has recently been its lot. Vernes's test also seems to indicate that there is at least temporary involvement of the cerebro-spinal fluid during the secondary period of infection, and that a normal Vernes optic density figure of the blood serum may be present with a high optic density figure of the cerebro-spinal fluid. I have not been able to find any record of clinical or pathological relapse in syphilitic cases where the Vernes optic density figure of both blood and cerebro-spinal fluid has returned to and remained at normal for eight months. If, as Vernes claims, there is reasonable hope that, after such a short period of normality, it is safe to declare a person definitely cured, a very great achievement would be recorded, and one that would relieve both clinician and patient from much anxiety. The Vernes optic density figure also seems to fall and rise more closely and definitely in relation to clinical improvement and relapse than does the Wassermann reaction.

In the Wassermann reaction the quantitative estimation from the strongest positive to the complete negative is necessarily limited as, even when three strengths of serum are used (2½ per cent., 5 per cent., and 10 per cent.) the scale is a short one, since complete inhibition of hæmolysis, partial inhibition, and complete hæmolysis are the only degrees that can be recorded with each dilution. With the Vernes test, on the other hand, the scale runs from zero up to or beyond 280 degrees, although over "7" is taken as a definite positive, so that the degrees of positiveness or of Vernes's optic density figure above "7" cover a very long scale in which small alterations in "positiveness" are clearly and definitely shown. The doubtful zone is a very narrow one in the Vernes test, lying only between "3" and "7," as less than three degrees of Vernes's optic density figure is definitely normal. Sera that show Vernes's degrees between "3" and "7" must be returned as doubtful, and should be re-examined on several occasions. Over five degrees is probably positive. It must be understood that the Vernes degrees are relative, not absolute, and are arrived at by subtracting the optic density scale reading of the incubated serum-alcohol-distilled-water mixture from that of the serum-horse-extract-distilled-water reading. For instance, if the reading in one were 134, and the other 136, the difference or Vernes's figure would be "2," and the serum not syphilitic; while if the reading of the one were 172, and the other 197, the difference would be "25," and the serum syphilitic; and if the reading of one were 183, and the other 187, the difference would be "4," and the serum reported as doubtful.

Even if the Vernes test is no more accurate than the Wassermann for diagnostic purposes, its far greater range of degrees of positiveness offers a marked advantage as a method of controlling treatment and estimating the therapeutic value of the drug to the individual. It is not uncommon to record a Vernes degree of positiveness of well over "100" in untreated cases of syphilis, and this degree may fluctuate between such a high figure and "7" according to the treatment and the individual's reaction to the treatment. The Vernes chart may record these great variations in positiveness, while the Wassermann reaction remains unchanged at "strongly positive ++."

If there is a greater fall in the Vernes degree after a bismuth than after an arsenobenzol course (or vice versa) it is highly probable that the drug producing the greater fall is the more potent for that patient at that time.

The opsonic index has departed to the limbo of discredited tests because different indices were so frequently obtained with the same serum by different observers. It is not unknown for one laboratory's doubtful Wassermann to be the negative of another, and perhaps even the positive of a third, while the encouraging factor about the Vernes test is that the Vernes optic density figure of the same serum, as reported by different observers, usually lies within an extremely narrow zone. Whatever the ultimate verdict may be, Dr. Ofenheim and St. John's Hospital, Lewisham, can be congratulated on their pioneer work in this country in investigating the Vernes test.

Conclusions.

The widespread opinion of responsible observers with an extensive experience of the Vernes test appears to agree that: (1) the Vernes method is an improvement on all flocculation tests where the optic density is measured by the unaided eye; (2) the Vernes method of diagnosis agrees with the Wassermann reaction in the great majority of cases; (3) the Vernes method is superior to the Wassermann reaction for the control of treatment; (4) the Vernes photometer affords a rapid and convenient method of estimating the albumin content of the cerebro-spinal fluid.

With such a consensus of opinion in Europe and America the neglect of the majority of the medical laboratories of this country to explore an apparatus and technique that claims to afford the observer an accurate estimation of flocculation is remarkable. No doubt the cost of the photometer, mixer, water baths, and other apparatus which, with import duty, exceeds £100, is one reason why the test is so little known in Great Britain, where most laboratories do not possess any research fund. This test has received very little publicity in English medical literature, and consequently there are many, even in the front ranks of our profession, who have never heard of the test, although a fairly bulky foreign literature on the subject is accumulating. The superiority of the Vernes test over the Wassermann test has not yet been proved here, but neither has it been disproved. The Vernes method certainly deserves a wider investigation in this country than it has hitherto received.

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WORK OF EYE HOSPITALS.—The annual report of the Wolverhampton and Midland Counties Eye Hospital shows that last year there were 12,920 new patients, of whom 769 were in-patients, and that 6880 accidents were treated. In the ultra-violet ray department there were 4221 treatments, nearly double the previous year's number.—The Bradford Eye and Ear Hospital is to be enlarged, and the operating theatre, intended for three operations a day, whereas now the average exceeds ten, modernised. Last year there were 3280 operations and nearly 37,000 out-patients' attendances.—Extensions of the Sussex Eye Hospital have been approved which will provide accommodation for 50 patients. The out-patient department is to be enlarged and appliances modernised, and it is hoped to provide beds for paying patients. The work will cost £25,000.

IODISED TINCTURE OF GUAIACOL

IN THE TREATMENT OF SYNOVIAL AND SEROUS AFFECTIONS.

By JOHN MABERLY, M.R.C.S. Eng.

THE preparation tinctura iodo-guaiacol contains in solution an iodine addition-compound of guaiacol, C_6H_4 OH.OCH_3—the methyl ether of pyrocatechol. Efforts to produce it in a dry state fail because secondary changes occur during the attempt: therefore no empirical formula can be assigned to it. One fluid drachm of the tincture contains one-fortieth of a grain of iodine in organic combination. In vitro iodine is one of the most powerful germicidal or antiseptic agents we possess. In vivo, however, none of the saturated inorganic pharmacopœial preparations exhibit any marked internal antiseptic action. From a chemical point of view potassium iodide seems peculiarly fitted to act as a carrier of iodine to the system. The atomic weight of its two elements—potassium 39 and iodine 127—means that in administering eight grains of potassium iodide we are apparently giving rather more than six grains of iodine, equivalent to half an ounce of the tincture. It is quite evident that its capacity to set free iodine in the system in a form in which its antiseptic properties are active, potassium iodide must be virtually inert. It was with the idea of obtaining some unsaturated organic form of iodine which could be taken by the mouth and would exhibit some of antiseptic properties of iodine in the system that the tinctura iodo-guaiacol compound was constructed.

The object especially in view was the treatment of pulmonary tuberculosis. The fact that guaiacol apparently had some beneficial action as an internal antiseptic in that disease suggested that its combination with iodine might give more definite results. Administration of the compound in several advanced cases of pulmonary tuberculosis over periods varying from one to eight weeks made it clear that, although the drug was non-toxic, it had no definite antiseptic action, at any rate in the finer lung tissue. Its use in place of potassium iodide in the class of cases in which I had been accustomed to use the latter drug, such as gummata and late neuro-syphilitic affections, proved that it was more efficient. In children with a tendency to enlargement of the tonsils and adenoids, which we now look upon as being probably dependent on a deficiency in thyroid extract, the tinctura iodo-guaiacol also appeared beneficial. Some interesting results in South Africa suggested that the drug had antiseptic action in the serous fluids and membranes, and experimental administration in pleurisy and synovitis confirmed this idea.

Cases of Pleurisy.

The following case of acute pleurisy is a good illustration of this action:—

The patient, a well-built man of 24, was seen on Sept. 24th. He had been suffering for two days from an acute feverish attack with a series of rigors, dry cough, and very severe pain in the right chest on breathing and coughing. He gave a history of exposure to rain and cold. His temperature was 102·6° F.; breathing rapid and shallow. The breath sounds were obscured over the front of the right chest and the percussion note was dull from the fifth interspace downwards over a limited area, with some friction sounds just below the nipple line. Tinctura iodo-guaiacol, one fluid drachm to half an ounce of syrup and water, was ordered to be taken every eight hours.

Sept. 25th: The patient was distinctly easier, and stated that the rigors had ceased and the pain was very much less. His temperature was 100°.

26th: The temperature was 98·6°; the pain had gone. The breath sounds were still somewhat obscured but were audible over the dull area.

28th: The temperature was 98·2°. All signs of pleurisy had disappeared. The patient was allowed up the next day and no further medical attendance was required.

In my lung ward at the military hospital at Roberts Heights in 1917 and 1918 five cases of dry pleurisy came under treatment among malarial patients from East Africa. The symptoms in each case were typical, with dull patches, obscured breath sounds, friction, and pain on breathing. The temperatures were variable on account of the presence of malaria. All these cases cleared up rapidly on administration of one drachm doses of tinctura iodo-guaiacol, given three times a day for the first 24 hours and then twice a day. Relief from pain was obtained within 24 hours and the physical signs disappeared in three or four days. During the last two years similar rapid relief from pain and symptoms has been obtained in patches of pleurisy among sanatorium patients suffering from pulmonary tuberculosis in England. In pulmonary tuberculosis especially one meets with cases in which there are old, permanently adherent patches of pleura which are subject to acute attacks occasionally. In these, although the pain and signs of active microbic infection quickly disappear, the dull patch of adhesion remains.

Whilst I was on military service more than one case of pleurodynia was sent into my wards diagnosed as pleurisy. This rheumatic form of nerve muscular affection does not come under the action of the tinctura iodo-guaiacol, but the preparation has proved curative in uncomplicated cases of acute pleurisy with effusion and also in the dry type. Cases which come under treatment after a definite amount of effusion has taken place naturally take longer to clear completely than do those in which the treatment is undertaken at an earlier stage. The resolvent action of the drug may, I think, be relied upon to create absorption in most cases without surgical interference. Where evacuation of the effusion seems necessary, aspiration or evacuation by simple incision, with immediate closing of the wound, is all that is necessary; the antiseptic and resolvent action of the drug should then be effective in completing the cure. If the pleura is left open and drained of its fluid, the drug fails to act so satisfactorily.

In many cases, especially in England, acute pleurisy is complicated with an unhealthy condition of the adjacent lung tissue, usually of a septic or pneumonic type. In these cases the results of administration of the tinctura iodo-guaiacol are not so satisfactory or definite as in the uncomplicated cases. The drug has no disinfectant action in the finer lung tissue and, although the pleura will improve, the lung condition with cough and temperature may continue. In two cases of pneumothorax, one tuberculous and the other non-tuberculous, the results were very satisfactory. Healing and resolution took place in a very short time.

In the treatment of synovitis and teno-synovitis of septic and tuberculous types similar antiseptic and antiphlogistic action has been evident.

Tuberculous Synovitis of the Dorsal Vertebræ.

This patient, a married woman of 28 with one child, had been suffering for two years from intermittent attacks of pain about the region of the third and fourth dorsal vertebræ. It had gradually been getting worse and threatened to incapacitate her. She had been in Cape Town hospital for three months and the diagnosis had been confirmed by the tuberculin test. When she returned home the symptoms recurred as soon as she attempted to get about and do any work, such as using a broom or her sewing machine. There was marked pain on palpation and percussion over the spines of the third and fourth dorsal vertebræ. I prescribed tinctura iodo-guaiacol, one fluid drachm in half an ounce of syrup and water, to be taken twice a day. The pain steadily diminished and at the end of a fortnight both the pain and tenderness on pressure had entirely disappeared. She continued taking the drug once a day for another fortnight. During the next two months she gained a stone in weight and was quite free from symptoms. She stated that the first three doses produced an almost immediate reaction, a peculiar sensation at the painful part and a general reaction "similar to the effect of a stiff tot of brandy." It lasted about ten minutes and did not recur after the third dose.

Septic Inflammation of the Knee-joint.

The patient, a boy of 8, had fallen in the road and suffered from a contused open wound over the left knee-joint. This was disinfected and the wound sutured. The wound

remained healthy but three days later the synovial membrane was painful and swollen. Tinctura iodo-guaiacol, one fluid drachm every 12 hours, was ordered. The pain and swelling disappeared during the next three days and the child was allowed to get up four days later and had no further trouble.

Other cases of tuberculous and septic types of synovitis have at various times come under treatment, and in each case the same antiseptic and healing action has been obtained. The drug was tested in advanced tuberculous disease of the spine and hip-joint in which suppuration and disease of the cartilages or bones was present. In these cases it completely failed to have any definite effect. Its therapeutic action has proved to be confined to the synovial membranes only; when once the disease has extended to the other tissues, it has no longer any curative action. The same want of any definite disinfectant action is found if a synovial membrane such as that of the knee is opened and kept drained of its fluid, as in the case of the pleura. The antiseptic action, both in the pleura and synovial membranes, apparently depends on the presence of the serous or synovial fluids and the integrity of the membranes. It is not evident in the blood or other tissues of the body with the exception of the ciliary membranes. In traumatic inflammation of the joints, and in sprains about the joints and tendons, the tincture has a rapid antiphlogistic action. The pain and inflammation disappear after administration of the drug, though the effusion may persist for a variable time.

Conclusions.

The uniform results obtained in a fairly large number of cases of pleurisy and synovitis of various types justifies the conclusion that in tinctura iodo-guaiacol we have a drug which has a definite selective antiseptic and antiphlogistic action in these membranes, provided they are closed, and one which fills an important gap in our materia medica for the treatment of septic, tuberculous, and traumatic inflammation of those membranes. It also exhibits the well-recognised resolvent effect of iodine.

The therapeutic effects of the tincture in the pleura and synovial membranes suggests that a similar action would be present in the other serous membranes and spaces, such as the cerebro-spinal and peritoneal. A limited experience of the use of the drug in meningitis, and in syphilitic and other infections of the cerebro-spinal system, supports this contention and further work on these lines appears very desirable. In the cases in which I have used the drug with apparent success lumbar puncture was not performed. In three cases of severe meningitis treated by another observer, lumbar puncture and the instillation of medicated serum was performed before and during the administration of the tincture. The results were completely negative. In any future work on these lines I would suggest that lumbar puncture should be avoided. It seems most likely in the case of a drug which only acts in a certain environment that any interference with that environment would nullify its action.

Dosage.

One fluid drachm given twice a day is sufficient in ordinary adult cases. In acute or dangerous conditions two or more drachms have been given every four hours for two or three doses. After that the smaller dose given once or twice a day has been found sufficient. Children are tolerant of the drug and take half to one drachm given in a similar manner. The addition of a little simple syrup to each drachm of the tincture, and water to half a fluid ounce is not an unpleasant mode of administration. Chloroform either alone or in solution is quite incompatible.

It is very difficult in general practice, without the facilities of a hospital and skilled laboratory help, to carry out to a satisfactory conclusion any therapeutic investigation, especially if the results are unexpected. One has to wait a long time for suitable cases, and when they do occur they are not under the skilled supervision which is desirable for scientific records.

Note.—The British Drug Houses, Ltd., have undertaken to place the preparation at the disposal of the medical profession.

Clinical and Laboratory Notes.

A CASE OF DISLOCATION OF THE RIGHT INNOMINATE BONE,

ASSOCIATED WITH LACERATION OF THE RIGHT KIDNEY.

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Owing to its rarity this case seems worth recording.

The patient, a man of 21, was thrown from his motor-bicycle on March 11th, 1927, and crashed violently on his right side and hip. On admission he was in a condition of severe shock, pale, and almost pulseless. There was bruising of the right flank with rigidity and swelling. The right side of the pelvis was loose and there was an obvious hiatus in the region of the symphysis pubis. The pelvic condition was at first thought to be a fracture of the pelvis and a catheter was passed to ascertain whether the urethra was ruptured; bloody urine was drawn off but the urethra was intact. The pelvis was steadied with a firm binder and the patient treated for shock. The condition of shock persisted for several days and a large swelling was present in the right loin. It was daily debated whether it was advisable to explore the right kidney which was evidently

Radiogram showing displacement upwards of the whole right os innominatum.

lacerated, but conservative counsels prevailed—at first because it seemed that the least further interference might cause his death, later because he seemed to be getting better without.

The urine cleared and the renal hæmatoma slowly subsided. In a few days his condition permitted of taking a radiogram (here shown), when it was found that the symphysis had separated and the right sacro-iliac joint had given way. Attempts were made to bring down the ilium by weight extension and to draw the pubes together with a hip-band and elastic traction. It is pretty clear, however, from the later radiograms that but little was accomplished in this direction, although the gap between the pubes appeared on palpation to be much diminished when he left hospital. In February, 1928, he could walk some miles and hardly any limp is now perceptible. The sacro-iliac joint is firmly united and there is calcified material (? bone) between the separated pubes.

Thus treatment, which in the light of X ray finding seems to have been inadequate, has ended in a useful functional result.

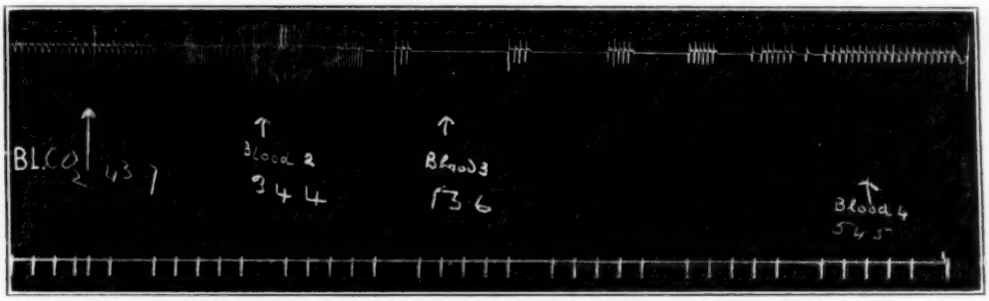
RESPIRATORY ACTION OF LOBELINE IN THE DOG.

By Samson Wright, M.D., M.R.C.P. Lond.,
AND
F. R. Curtis, M.Sc., M.B. Leeds.

(*From the Department of Physiology, Middlesex Hospital and King's College.*)

In continuation of our previous studies [1] we have made a more detailed quantitative examination of the respiratory action of lobeline in the dog anæsthetised with chloralose. The tracheal cannula was connected to respiratory valves of low resistance, which enabled the expired air to be collected at appropriate intervals in a series of Douglas bags; continuous sampling of the alveolar air was carried out by the automatic method of Wright and Kremer.[2]

From the results summarised in the table, it is clear that doses of 0·15 to 0·4 mg. lobeline per kg. body-weight produce, as a rule, in the dog under chloralose anæsthesia a marked initial stimulation of respiration. The minute pulmonary ventilation may increase five to ten times and in one case nearly 20 times; this result is due mainly to an increase in depth and to a less extent to acceleration of the breathing. The alveolar CO_2 may decrease by 1·4 to 3·7 per cent. of an atmosphere; as these figures represent the average composition of the alveolar air throughout the initial hyperpnœa, it follows that the level of alveolar CO_2 per cent. at the end of this period must be even lower than the figures noted.



Dog. Chloralose respiration. Intravenous injection of 3 mg. lobeline. Initial hyperpnœa followed by apnœa and Cheyne-Stokes breathing. Blood collected at points marked with arrows. Time in 10 secs.

The period of hyperpnœa in most of the observations is from 1 to 2·5 minutes; the CO_2 expired per minute may be two to four times the resting amounts. The total amount of CO_2 exhaled during this phase may thus be as much as eight or ten times the amount excreted during a control period of similar duration.

Dog.	Procedure.	Period (min.).	Pulmonary ventilation. Total (litres).	Pulmonary ventilation. Per min. (litres).	Respiratory rate per min.	Alveolar CO_2 per cent.	Expired CO_2 per cent.	CO_2 output per min. c.cm.	Remarks.
I. (10 kg.)	Control.	8	16·65	2·08	23	4·3	2·7	56·1	332 c.cm. excess CO_2 output—i.e., 332 c.cm. CO_2 expired during experimental period in excess of amount expired during control period of similar duration.
	..	8	15·75	1·96	22	4·6	3·0	60·0	
	2 mg. lob.	2·30″	50·3	21·2	—	2·0	0·9	191	
II. (11 kg.)	Control.	10	10·5	1·05	16	4·9	3·2	33·6	
	2 mg. lob.	2	23·1	11·5	40	1·2	0·8	92.0	117 c.cm. excess CO_2.
	(interval).	1							
		2	3·4	1·7	24	2·8	1·0	17·0	33 c.cm CO_2 retained.
III. (14 kg.)	Control.	8	21·3	2·6	—	4·8	3·2	85·4	
	2 mg. lob.	2	27·6	13·8	—	1·85	1·5	207	244 c.cm. excess CO_2.
	(interval).	0.20″							
		2.30″	2·3	0·92	—	4·4	1·9	18	16 c.cm. CO_2 retained.
		3	9·75	3·25	—	3·82	3·5	122	111 c.cm. excess CO_2.
IV. (13 kg.)	Control.	15	35·6	2·4	22	4·6	2·85	68·4	
	2 mg. lob.	1.40″	18·0	11·0	40	2·7	2·0	220	250 c.cm excess CO_2.
		—	—	—	24	3·7	—	—	First 2 min. of this period.
		6	14·4	2·4	—	—	2·5	60	50 c.cm. CO_2 retained.
		—	—	—	24	3·8	—	—	Last 4 min. of this period.
	Control.	6	18·5	3·1	32	3·2	2·7	81	
	2 mg. lob.	1.30″	27·8	18·5	52	1·8	1·5	277	290 c.cm. excess CO_2.
	(interval.)	45″	—	—	—	—	—	—	
		—	—	—	36	3·0	—	—	First 2 min.
		5.15″	15·6	3·0	—	—	2·2	66	80 c.cm. CO_2 retained.
		—	—	—	36	3·0	—	—	Last 1 min. 30 sec.
V. (11 kg.)	Control.	15	28·5	1·9	12	4·7	3·6	68·4	
	4 mg. lob.	1.25″	21·25	17	—	1·6	1·5	255	223 c.cm. excess CO_2.
		2.50″	3·3	1·18	—	3·4	2·4	28	150 c.cm. CO_2 retained. Apnœa present during early part of this period.
		1.15″	2	1·6	—	3·7	2·6	28	33·5 c.cm. CO_2 retained.
		4	12·6	3·15	—	—	2·1	66	
VI. (22 kg.)	Control.	6	18·75	3·12	21	3·1	2·5	78	
	5 mg. lob.	1.50″	32·1	17·5	—	1·7	1·4	245	306 c.cm. excess CO_2.
		2.4″	27·5	10·3	—	1·2	0·84	86·5	18 c.cm „ „
		1.40″	26·8	16·1	—	1·0	0·92	148	116 c.cm. „ „
VII. (7 kg.)	Control.	22	9·5	0·43	—	4·1	2·8	12	129 c.cm. excess CO_2; alveolar CO_2 collected during last 30 secs. of this period. Hyperpnœa was followed by 7 min. apnœa and then breathing resumed.
	3 mg. lob.	1.10″	9·65	8·3	—	1·5	1·7	141	

The hyperpnœa is, however, usually transitory and the ventilation rapidly decreases and soon falls to normal or below normal. In some instances apnœa may set in quite suddenly (and lasted 7 minutes in one instance) or Cheyne-Stokes breathing may develop (see the tracing which is here reproduced). During this period of respiratory depression CO_2 retention occurs and the alveolar and blood CO_2 levels begin to recover. Thus in the tracing the initial blood CO_2 (in volumes per cent.) was 43·7, after 1 minute hyperpnœa 34·4, soon after the end of the hyperpnœa 13·6, and when normal breathing was restored, following the phase of irregularity, 54·5. The alveolar CO_2 may rise however, though the ventilation remains above normal.

In some instances the initial hyperpnœa may be prolonged (dog VI.) or a secondary period of overbreathing may set in (dog III.).

The initial effects reported here are similar to those observed by ourselves [1] and Smith [3] in intact, decerebrate, or morphinised dogs; the secondary depression noted seems to be related to the presence of chloralose anæsthesia.

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A CASE OF AGRANULOCYTIC ANGINA.

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Agranulocytic angina is a name first used by Schultz in 1922 to describe a symptom-complex whose essential feature is the association of a septic inflammation of the tonsils, pharynx, or mouth with a profound and increasing leucopenia, affecting especially the polymorphunuclear cells.

Acute onset, fever, and pronounced toxæmia appear to be constant features of the condition, and only less constant a failure to react to treatment and a fatal termination. Since 1922 a considerable number of cases presenting these features have been reported, chiefly by German and American observers, and the condition finds a place in American text-books of medicine. It is briefly mentioned in the third edition of "Osler and McCrae," but is not alluded to in other standard English text-books, and no case, at least under this title, appears to have been recorded in this country.

The nature of the condition has been discussed by several writers, among them Kastlin,[1] of Toronto, who reviewed 43 cases, reported by some 18 separate observers, and described in detail two cases of his own with the findings at autopsy. L. K. Gundrum,[2] of Los Angeles, reviewing the subject in March, 1928, mentions 47 collected cases, of whom 43 died.

No evidence that the condition is due to a specific organism is forthcoming. Smears and cultures from the mouth have generally shown a mixed infection, the bacillus of diphtheria and Vincent's organisms being absent, and although blood culture was positive in 9 of the 43 cases reviewed by Kastlin, the organisms grown were of four different kinds: hæmolytic streptococci, *Bacillus pyocyaneus*, staphylococci, and *B. coli*. On the evidence of these facts and of certain variations in symptomatology, Kastlin concludes that the condition is not a clinical entity, but that "the factors that bring about the clinical state must depend on an inconstant individual reaction to the etiologic agent." This may well be, but it is clear that the cases have a very strong family likeness and the clinical picture seems sufficiently clear to deserve a descriptive name pending further analysis. It cannot possibly be classed among the "terminal infections."

[1] Kastlin, G.: Amer. Jour. Med. Sci., 1927, n.s. clxxiii., 799.
[2] Gundrum, L. K.: Arch. Internal Med., 1928, xli., 343.

In addition to the essential features of the syndrome already mentioned, a number of inconstant symptoms have been described; but, with the doubtful exception of jaundice, which was present in 58 per cent. of Kastlin's cases, they are all such as may occur in toxæmic or septicæmic states, of whatever origin.

The distinguishing mark of the condition is the extreme leucopenia. Kastlin states that in two cases an initial leucocytosis has been observed, but within a day or two of onset a count of 1000 to 2000 white cells per c.mm. is usual, and this continues to fall, counts of 500 or fewer per c.mm. being not uncommon, with 100 as the lowest count recorded, while the percentage of polymorphonuclears falls to 15, 5, or even 0 per cent. in differential counts. In the few cases of recovery it is stated that the blood picture has returned to normal. If the condition is to be ascribed to an abnormal reaction to an "ordinary" infection, the type of patient attacked, previous history, and state of health at the time of onset are of obvious importance. The patient is typically, but by no means always, a woman, and middle aged. Of Kastlin's 43 cases, 78 per cent. were in women, 22 in men. The youngest patient was 18, the oldest 74, the average age of the women was 46 and of the men 29. In 28 cases the disease occurred during good health; in 15 after a longer or shorter period of impaired health due to a variety of causes. Seven of the 43 had had previous oral infections, and one case is on record of a patient who recovered from a first attack but succumbed to a second. In none of these cases is there a history of preceding asthma or other "allergic" disorder. In all cases the onset, whether during good or impaired health, was acute with high fever.

At autopsy the only characteristic feature is, apparently, a hypoplasia of the bone-marrow "with almost total absence of granulocytic cells" (Kastlin), the other findings being those associated with death from toxæmia or septicæmia. A broncho-pneumonia in which the alveoli were filled with fibrin, serum, and red corpuscles, leucocytes being absent, was found in one of Kastlin's cases, and it seems probable that pneumonia, when it supervenes, would be of this type.

The case that follows presents the essential features of the syndrome and in all respects very closely resembles many of the recorded cases.

The Case Described.

The patient was a lady of 50, the mother of ten healthy children, and a very capable mistress of a large household. For the last eight years she had had a mild chronic asthma with occasional acute attacks. These responded well to adrenalin, but she was rarely free from slight asthmatic dyspnœa. In other respects she had good health and had not before showed evidence of defective resistance to infection. During the last six or eight months she had had more than her share of anxiety and worry for various domestic reasons, and in August, 1928, while away on holiday, she had an attack of acute pharyngitis with fever, but recovered without incident. No blood count was done on this occasion. At the end of October she was troubled with neuralgic pains in the head but appeared otherwise to be in her usual health. On Nov. 7th, in the evening, she felt chilly and ill and went to bed, taking a tablet of dial which had been prescribed for her in her previous attack of pharyngitis. In spite of this she spent a wakeful night, and I was called to see her on the morning of the 9th. She was then very drowsy, out of proportion to the hypnotic taken. Her temperature was 102·8° F., pulse-rate 120, respiration-rate 32, and the breathing slightly asthmatic. Herpes was present on the lip and left nostril. The mouth was dry with sticky mucus between the tongue and palate, the pharynx was red and swollen, the tonsils especially so, a little whitish exudate was present on the right tonsil, and the tonsillar glands were palpable and slightly tender.

The heart and lungs showed little abnormal, the urine a haze of albumin. A swab was taken of the tonsillar exudate and sent to a pathologist, who reported in the film streptococci, Gram-positive and Gram-negative bacilli, and a few spirilla (the latter not typical of Vincent's angina), and in culture non-hæmolytic streptococci and diphtheroid bacilli but no *Bacillus diphtheriæ*.

Fever and drowsiness with inability to sleep continued, the throat became sore, and shallow ulcers began to form on the tonsils. On the evening of Nov. 10th a raised, blotchy

erythematous rash appeared on the buttocks and backs of the elbows and spread rapidly over the legs, arms, and forearms, with a simple erythema of the palms of the hands. The rash came out quickly and then partly faded, but returned later in the illness.

The blood was first examined, after a consultation, on Nov. 11th. The count showed: red blood cells, 3,800,000 per c.mm.; hæmoglobin, 68 per cent; colour-index, 0·9; white blood cells, 2100 per c.mm.; polymorphonuclears (1 per cent.), 20 per c.mm.; lymphocytes (93 per cent.), 1950 per c.mm.; large mononuclears (6 per cent.), 130 per c.mm.; no eosinophils or basophils. No abnormal red or white cells seen. Blood culture was negative, and a second throat swab confirmed the results of the first.

From this on, the disease ran a slowly progressive course. Fever continued, ranging from 100° to 103° F., the shallow tonsillar ulcers extended and involved the right faucial pillar with, later, a small ulcer on the tip of the tongue, the tonsillar glands remained slightly enlarged and tender, but there was no attempt at suppuration, no œdema of the neck, no dyspnœa, and no marked dysphagia. The albuminuria increased somewhat and was accompanied by granular casts. The herpes labialis increased. Inability to sleep and discomfort in the nose and throat were the patient's chief complaints; she appeared gravely ill, but took nourishment well and did not lose flesh.

A second blood count on Nov. 15th, 18 hours after a blood transfusion of 400 c.cm., showed: red blood cells, 3,960,000 per c.mm.; white blood cells, 500 per c.mm.

On the evening of Nov. 17th an abrupt rise of temperature to 104·4° F., with rapid breathing and the expectoration of thick, ropy sputum seemed to indicate the onset of pneumonia, but no corresponding physical signs were found then or later in the chest. A film of the sputum showed inspissated mucus with a minimum of cells. No jaundice, hæmorrhages, petechial or other, or enlargement of spleen or liver appeared.

Treatment, except in the alleviation of symptoms, appeared to be entirely without effect. At an early stage a sensitised streptococcal vaccine was given in doses up to 500 million daily, two blood transfusions, one of 400 c.cm. and one of 500 c.cm. were given, but without reaction or apparent benefit; paints, sprays, and gargles did not appreciably alter the condition of the throat. Antistreptococcal serum was at first withheld for fear of producing anaphylactic shock in an asthmatic subject, but was ultimately given in doses rising to 10 c.cm. three-hourly, without reaction or effect. Such signs of asthma as occurred were easily controlled by adrenalin, and sleep was secured by injections of omnopon. The patient became increasingly exhausted and drowsy and died on Nov. 20th after 12 days' illness.

The case described is typical of the condition known in Germany and America as agranulocytic angina. Since its recognition depends on the blood count, and the disease is not of a kind generally admitted to hospitals, it may well be less uncommon than the literature suggests. This case is reported in the hope that others will be recognised and noted and light ultimately be thrown on the ætiology and treatment of this obscure disease.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

AT a meeting of this Society held on Feb. 25th, Dr. J. WALTER CARR, the President, being in the chair, Prof. A. H. BURGESS (Manchester) introduced a discussion on

ACUTE INTESTINAL OBSTRUCTION.

The present century, he said, had seen a great improvement in the surgical treatment of acute abdominal crises; this applied to nearly all groups, but least of all to acute intestinal obstruction. At Manchester Royal Infirmary the mortality from acute appendicitis in 1924 was only one-twelfth what it was in 1900; that from perforations of duodenal and gastric ulcer was only one-seventh in the later year of what it was in 1900, whereas the mortality from acute intestinal obstruction had only been reduced by half in the same period. Mr. H. S. Souttar had lent him the figures compiled for the British Medical Association meeting in 1925, the largest available on the subject. It represented five years' statistics of seven hospitals—three in London, three in the provinces, one in Ireland. He hoped Mr. Souttar would compile a similar table at the end of 1929; these would be classical for another decade.

Mortality.—For the purposes of the present discussion Prof. Burgess omitted from these 3064 cases the strangulated hernias and the acute intussusceptions. There was no excuse nowadays for anyone missing a case of obstruction from strangulated hernia; nor, indeed, of acute intussusception. Moreover, the latter was not primarily an obstruction; the object of early treatment was to prevent obstruction following the intussusception. Excluding those, there were left 1042 cases, giving 395 deaths, or a percentage mortality of 37·9. It was this mortality that surgeons were out to reduce, the death-rate of cases of the condition which were not readily obvious, and in which there was some excuse for not making an immediate diagnosis. At the Royal Infirmary, Manchester, from 1913 to 1922, the mortality was 41·1 per cent., while in 1925–27 it was 30·2 per cent.

What was the reason for this high mortality? He did not doubt that the main reason for it was delay in carrying out the only treatment which could do good, the surgical. Still too many cases were being seen only after the onset of a marked distension and toxæmia, when there existed what was termed fæcal vomiting. He contended that the early signs of acute intestinal obstruction had not been sufficiently stressed in the text-books, or at least not until the more recent ones were published. Too much stress was laid on the presence of fæcal vomiting as a sign of the condition; but that was not so much a symptom as an end-result. There was a tendency on the part of many to wait for the development of fæcal vomiting before diagnosing intestinal obstruction. The man who waited for the perfect clinical picture would rarely save his patient.

Primary or Secondary.—Acute intestinal obstruction might be either primary or secondary; in other words, it might occur as a bolt from the blue, or be a process engrafted upon a previously existing subacute or chronic condition. In the latter were two features which were never present in the primary. One of these was that it was frequently possible to see the outlines of individual dilated coils of intestine, and to see peristalsis. Sudden, acute obstruction always led to dilatation and thinning of the wall, never to visible peristalsis. Of course, in very thin people, such as those recovering from an exhausting illness, peristalsis could be seen apart from obstruction, but then it was occurring in normal-sized coils. When a peristaltic wave could be seen passing dilated coils, one could be sure it was a case of obstruction which had existed at least several weeks. Even when peristalsis was not actually visible, it could often be made evident by keeping the hand on the abdomen; a coil could be felt to be alternately hardening and softening. Primary acute intestinal obstruction varied in acuteness of onset. It was very acute in internal strangulation, or intussusception, or volvulus. In other types its development might be somewhat slower. Only in types associated not only with obstruction to the lumen of the bowel and interference with the blood-supply was the onset really acute; the latter factor was by far the more important. Fæces could be arrested for days, even weeks, but no patient could go on long with complete arrest of circulation. In general terms, the higher in the bowel the seat of obstruction the more acute were the symptoms, the only exception to that being the case of volvulus of the sigmoid, in which there was associated damage to a large extent of mesentery.

Early Symptoms.—The early symptoms of acute primary intestinal obstruction were those common to any other acute abdominal crisis; they were described many years ago by Sir Frederick Treves under the term "peritonism." They were, however, of no localising value. In this acute condition the pain

was always referred to the epigastric region, and hence it did not indicate the seat of the trouble. Often the pain was paroxysmal at first, and as the obstruction became complete, pain became continuous. The vomiting was, at first, entirely of a reflex character; later it was due to mechanical obstruction. The higher the site of the obstruction, the earlier did vomiting set in. Vomiting was a marked symptom when there existed high jejunal obstruction. When it was quite low down in the bowel vomiting might be absent throughout. True fæcal vomiting did not occur in acute intestinal obstruction, only when there was a fistulous communication between the colon and the stomach. Vomiting of true fæces, however, had been described apart from any obstruction at all. The important point about the vomiting was not so much its character as its persistence. Early in the case the cessation of the passages of fæces and flatus might not be absolute, because at the moment of obstruction the portion of intestine below the obstruction might contain quantities of fæces, and one, or even two, enemata might bring away fæces and gas. Unless this was borne in mind, the nature of the case might be missed.

The other symptom was active distension. Distension of a coil above the site of the obstruction must be present in every case of obstruction, though it was not always visible. The vomiting and the distension varied inversely. Another point about the distension was its shape. When it occurred in the sigmoid, there was the characteristic flattening of the flanks and the barrel-shaped abdomen; when the obstruction was in the small intestine, one found a prominent central distension. Volvulus of the sigmoid was an exception, for there, though the obstruction was low down, distension came on very rapidly. This distension was the most unfavourable feature in connexion with intestinal obstruction; it rendered operation more difficult, increased the degree of shock, and rendered it almost impossible to prevent collapse of the bowel.

Palpation might sometimes reveal the presence of a tumour in acute intussusception and in malignant disease. There was marked tympanitic resonance over the distended portion. He made a plea for auscultation of the abdomen, as he had found it of great value in the diagnosis of intestinal obstruction. There were certain sounds, which could not be mistaken, indicating the passage of fluid contents in a distended cavity which contained a considerable amount of gas, a kind of bell-tinkling sound.

Rectal examination was very important; if there existed a stricture or growth in the rectum, it could be felt, and sometimes through the rectal wall one could feel a mass in the sigmoid which had prolapsed into the pelvis. Frequently ballooning of the rectum could be made out, it was often associated with a growth in the upper sigmoid region. When obstruction was suspected in the large intestine, sigmoidoscopy should always be carried out; the instrument could be passed 9 to 11 inches, and, from a negative point of view, it was valuable to be able to say that within that area there was no obstruction.

Site of Obstruction.—With regard to diagnosis of the site of the obstruction, sometimes a palpable tumour in the abdomen furnished the guide; or if the case should be seen early enough, one might be able to say where the local distension started. Mostly, when the case was seen, there was no such guide, and all one could determine was whether the obstruction was in the large or the small intestine. In Mr. Souttar's list there were 586 cases in the small intestine, 433 in the large; roughly, the chances favoured the obstruction being in the small rather than in the large bowel. When the medical history revealed previous indigestion or obstructive troubles it strongly favoured the obstruction being in the large intestine; when the obstruction occurred suddenly, the site was more likely to be the small bowel. The key to the position was the condition of the cæcum. If the obstruction was in the colon, the cæcum must be distended, unless there was a growth of the cæcum itself; then it would be palpable. If the obstruction was in the small intestine, the cæcum must be prolapsed. Often before operation it was possible to say whether one was dealing with colonic or small intestine obstruction. If obstruction could be definitely located to the large intestine, it was a 9 to 1 chance that the case was one of malignant growth. If one could determine that the obstruction was in the small intestine, the odds were 300 to 1 against it being malignant growth.

Treatment.—With regard to treatment of true mechanical obstruction (he omitted paralytic ileus) there was really only one treatment—namely, the operative—though there were accessory methods, such as stomach lavage, and the exhibition of large quantities of fluid, as much fluid was lost in vomiting. And because of the loss of chlorides, hypertonic saline should be given. And anti-gas-gangrene serum was valuable, because many of the symptoms were due to *B. welchii*. Another treatment was by enemata of bile. The nature of the operation would depend on the stage of the disease. Seen early, with but little distension, and the patient in good general condition, the treatment was ordinary exploratory laparotomy. Before the anæsthetic was given the stomach must be washed out, and if possible, spinal anæsthesia should be selected; controllable spinal anæsthesia had given better results in his hospital during the last nine months than any form previously used. He preferred the right paramedian incision, going straight for the cæcum, to see whether it was distended. Next, he removed the obstruction or short-circuited it, or made an artificial anus above the obstruction. If seen in a late stage, with much distension, the less one did, provided it was effective, the better. The patient could stand but little manipulation. He usually contented himself with doing a valvular or "blind" cæcostomy; it afforded relief, and the patient would not die of obstruction.

Discussion.

Mr. C. H. S. FRANKAU emphasised the necessity of differentiating between the two types of acute intestinal obstruction, that of gradual onset due to a growth, and that in which the blood-supply of the bowel was interfered with by a band. When there was complete obstruction of bowel contents and no interference with the blood-supply, toxæmia intervened only at a later stage. In the case due to strangulation there was sudden pain, and shock was profound from the start. The rapidity of the acute symptoms was largely due to the rapid multiplication of anaerobic organisms. This was pointed out to him by the late Mr. Clinton Dent, who therefore advocated the injection of hydrogen peroxide after relieving the obstruction. He declared himself to be against the performance of "blind" cæcostomy. Only once had he done it in 18 years, and that was not in a case of obstruction; the patient had uræmia and was blown up by constipation. At the post-mortem the suspected growth was not found. In obstruction due to a strangulating band, diagnosis in the early stage was often difficult; there was danger that the case might be regarded as colic or food poisoning until too late. Obstruction by bands was the more likely diagnosis if the patient had had a previous operation on the abdomen. In acute intestinal obstruction the pulse steadily rose and the tongue rapidly dried. A succussion splash could be elicited. During an attack of pain a coil of intestine could be felt to harden under the finger; if it was also hard when the patient vomited, that was confirmatory. An acute case caused by a band had a grim prognosis. In food colic there was never absolute constipation, and the intestinal movements were more marked than in some cases of intestinal obstruction. Anti-gas-gangrene serum was valuable, and it should be given in large doses. On the principle that it was unwise to flog a tired horse, he thought eserine, pituitrin, and similar drugs were best avoided. If drugs at

all were used, the best was magnesium sulphate in ½-drachm doses, to assist the action of enemata. Ileus might follow injury, as after a fractured pelvis or a gun-shot wound, or after a kidney operation in which there had been a good deal of manipulation, or after a fractured spine with a cord lesion. Another group was the post-operative, in which there was no antecedent peritonitis and none subsequent to the operation. A third form of ileus was that which was a sequel to peritoneal inflammation. He referred to the acute distension which occurred after removing a gangrenous appendix. Ileus, the result of injury, was troublesome, and might be persistent, but it was rarely fatal. It reacted to stimulants of the intestine, such as eserine. He thought it probably followed interference with sympathetic plexuses. The second type, after a simple straightforward abdominal operation, in which there was neither hæmorrhage nor shock, and which was difficult to explain, was more serious. He thought it had something to do with the anæsthetic. Nowadays, anæsthesia was more skilful, and patients got more oxygen, and the occurrence of this was rarer. Human bile given to the patient often had a dramatic result for good; and the actual cautery to the abdominal wall sometimes caused a profound effect. In a third type, in which ileus followed on definite peritonitis, fluid should, if possible, be given by both mouth and rectum. Such operations as lateral anastomosis did not appeal to him.

Mr. HERBERT CARSON said it was well to remember that the higher the obstruction the more definite the symptoms, and the lower the obstruction in the bowel the more definite were the signs. He agreed that the present death-rate from hernia and intussusception was much lower than some years ago. Why, he asked, did people die of intestinal obstruction? He did not think that was known. In the late stage the patient had an extraordinary condition of toxæmia, and at the end death came suddenly, almost unexpectedly. He thought it must be due to absolute poisoning of the heart muscle. The deprivation of bile theory did not satisfy him, but Williams's gas-gangrene theory did to some extent, as he had derived remarkably good results from using the anti-gas-gangrene serum, and the wounds had healed up surprisingly quickly. In order to ascertain accurately what killed these patients, he thought researches should be made into the condition of the blood plasma. At the present time, in association with a pathologist at the Montreal General Hospital, arrangements had been made to examine the blood plasma of cases before anything was done, and again after the operation, and after the administration of anti-gas-gangrene serum, to see if, and in what way, it was altered. Until the actual cause of death was known, it would be difficult to find the remedy.

Mr. T. H. C. BENIANS said his feeling was that the term toxæmia was one which was loosely used by surgeons generally. The toxins which worried were those which were of the neurotropic type, because when they had arrived in a nerve path they seemed to be out of the reach of antitoxins. If, on the other hand, the toxin was in the blood stream, antitoxin treatment was much more hopeful. He had been working at the subject from the point of view of detoxicating diphtheria.

Mr. ZACHARY COPE spoke highly of the value of anti-gas-gangrene serum in cases of intestinal obstruction, even in faculent vomiting in post-operative ileus. The condition had got well without ileostomy. One such case he would have given four hours to live, but decided to give the serum, and after two doses the dirty sloughy condition cleared up and the patient got well. He urged a careful noting of the patient's diastolic blood pressure when estimating what could be endured in the way of operation, paying special attention to the difference between the systolic and the diastolic.

Mr. HOPE CARLTON spoke of a sign he had learned abroad was that in primary pneumococcal or streptococcal peritonitis there was a great increase in the conduction of vocal sounds from the chest through the abdomen as heard over the symphysis pubis.

Mr. A. E. ROCHE thought cases of intestinal obstruction would be brought earlier under active treatment if there was less concentration on thinking in terms of distension and late vomiting. Rutherford Morrison's rule was, that if peritonism occurred, as shown by sudden acute abdominal pain, with nausea and vomiting, and had existed six hours—other conditions such as tabes and colic being excluded—it was an indication that something serious had happened inside the abdomen. Pulse indications were not always devoid of fallacy, and it was possible to wait too long for the supposed characteristic pulse.

Mr. DICKSON WRIGHT discussed the desirability of washing out the stomach with sodium bicarbonate. Steps taken to overcome alkalosis were the administration of ammonium chloride and the giving of hypertonic saline solution, either intravenously or per rectum.

In his reply Prof. BURGESS defended his attitude towards the performance of blind cæcostomy in patients whose condition was precarious owing to intestinal obstruction.

ROYAL SOCIETY OF MEDICINE.

SECTION OF MEDICINE.

A MEETING of this Section was held on Feb. 26th, the chair being taken by Dr. ROBERT HUTCHISON, Vice-President. Prof. KARL HANSEN (Heidelberg) read a paper on

ALLERGIC AND PSYCHICAL FACTORS IN ASTHMA.

Asthma, he said, was a clinical term embracing a whole distinct symptomatology and implying neither uniformity nor specificity in ætiology. After excluding the similar forms—cardiac, uræmic, and hysterical asthma—clinicians considered bronchial asthma as a pathogenic entity, characterised by spasms of the bronchial muscles and increased exudation, symptoms which were now known to be the expression of an aggravated excitement of the parasympathetic system. Recent researches had shown that the cause of this neurosis of the vagus lay deeper and that an exogenous releasing physical factor could be made responsible for many cases. This factor was the allergen, the absorption and peculiar assimilation of which brought about the disposition to attacks and the attacks themselves. It was not yet known whether all cases of bronchial asthma had some allergic constituent, therefore non-allergic forms must be distinguished. The classification of bronchial asthma as an allergic problem was a most important step towards understanding its pathology, but it needed supplementing, and seemed destined to bring us nearer the solution of a deeper and more general problem—that of the biological psychophysical unity of the person.

After outlining the history and theoretical foundations of allergy, Prof. Hansen said that the identification of a disease as allergic depended on (1) the exact anamnesis, (2) the positive result of the cutaneous reaction, (3) the passive transferability of the cutaneous reaction to healthy persons through the serum of the diseased person, (4) the inspection of the patient's environment and the proof of the existence of specific allergens in it, (5) the exposure experiment, and (6) the disappearance of symptoms after the removal of allergens from the neighbourhood of the patient. None of these signs was alone infallible, but careful correlation of them gave a high probability of correct analysis of the allergic factors at any given time. Undoubtedly most sedulous attention should be paid to the exogenous allergic factor, but

it was clear that the presence of allergens in the environment of human beings did not necessarily produce an attack of illness. Only about 1 per cent. of people seemed to have any disposition to allergic diseases, and the tendency was usually found also among their antecedents. The conclusion that they had inherited a particular constitution was, however, only partly true, since Bloch and Karrer had shown that nearly every human being could be forced to an allergic reaction with chemically pure primrose poison. The frequency of allergic diseases depended largely on the amount and concentration of the absorbed allergen. Nevertheless, even sensitive patients could at times stand the presence of allergens without manifesting any reaction. This might be ascribed to temporary immunity, as seen in animal experiments and as used in J. Freeman's therapeutic method, successful in 80 per cent. of cases. The hypothesis of temporary immunity, however, did not explain the apparently incidental and haphazard rise and fall of many allergic symptoms. Other factors had a determining effect, especially exogenous factors which were easily overlooked—the change in the specific conditions of the resorption of allergens. Often an illness began when new conditions of resorption occurred—e.g., a workman had used ursol for years for dyeing furs, but got asthma the day he first tried to apply it with a spray instead of a paint-brush. In spite of a correct estimation of the exogenous factors, however, some endogenous ones seemed to play a part e.g., acclimatisation and influences of periodicity.

The Significance of the Psyche.

By the study of the functions pathological physiology had extended the pathology of the organs to a pathology of the body which was affected by every disturbance as a whole. This pathology was bound to the principle of the physico-chemical unity of the functions, but in this was expressed a higher principle—that of the manifestations of life in an individual, the principle of the person. The person alone was in the proper sense the subject of observation and treatment. Every pathogenic research which aimed at being the "pathology of the person" must take into account the relations of the psyche to the body as well as of the physico-chemical functions. Obviously such a comprehension of the patient was liable to serious errors. There was no means of measuring the strength of the psychical excitation and no possibility of finding a psycho-somatic energy formula. Fixing the psychical factor in itself paved the way for all kinds of deception of oneself and others; how much more dangerous, therefore, was the interpretation of its range of influence. One could only build with the greatest care and judgment and take into consideration cases where the proofs of psychical influences were overwhelming. Could it be proved that psychical factors influenced the disposition to disease in the face of known pathogenic substance affecting the organs; if so, how was it to be understood? For such a study nothing was more suitable than the allergic diseases, the dependence of which upon psychic influences was well known. Asthmatics often gave evidence of a "nervous" constitution, and hypnotism might do away with attacks for a longer or shorter time. The investigator wanted to know whether the patients acquired through psychological influences a resistance to or a tendency towards the allergen which partly constituted the attack. Success had attended a few experiments in which patients inhaled allergen in the hypnotic state or were protected from attacks by post-hypnotic suggestion, but in each patient other indeterminable influences had been at work. More convincing was a case in whose life-history the dependence appeared as a compelling force.

Prof. Hansen then related the history of a woman of 49 who had had asthma since the age of 10 but only at certain periods of her life, while at others it had completely vanished. She was sensitive to horse-dandruff and bed-feathers and had emphysema, but no sputum. A survey of her psychological history showed that the illness always set in when a situation was created which awakened a severe inner conflict from which she could find no escape. When the crisis was over the attacks stopped, whether the patient had found a real solution or apparent relief through transference. Her dreams clearly expressed the position.

The Correlation of Psychic and Allergic Factors.

Might not the pathological symptoms be considered simply as expressive movements, independent of any organic cause? A pathology of the person would never reject the question of the "meaning" of a symptom. A number of neurotic symptoms had a meaning, often unconscious, and the discovery of the meaning often gave a pathogenetically sufficient explanation for them. The problem, however, was somewhat different when the symptom was connected with a distinct organic defect. It was by no means always true that the proof of the organic defect alone could explain the dependent symptoms, for these varied in intensity according to "moods" and had a psychologically expressive meaning. In all cases of genuine idiosyncratic forms of disease we must proceed with the greatest caution in evaluating the symptoms as specific expressions. This patient had been definitely sensitive to a common allergen, but had only succumbed to attacks under the impression of certain experiences. That such experiences gained a sensitising preparing power did not lie in their subject matter alone, but had its reason in the much more general biographical significance which they acquired in the particular situation of the person for his development. The problem of post-choreic motility derangements was one of the same kind. In asthma there was an ever-renewed intrusion of morbific germs (the allergen) into the organism, but these agents only led to illness when they found the body prepared by certain psychical experiences. The aim of the paper had been to show that diseases, the incitement of which was manifestly subject to pathogenic physical components, were also absolutely dependent in their course, even in their origin, on special psychical influences acting on the patient. We could not yet say what organic links the mind used to prepare the body, but the vegetative nervous system played a most important part. It was a system over which the will had no control and which was particularly determinable by psychical influences. The clinician could not go too far in analysing all these threads, both psychic and organic, but he would only get an incomplete view of the whole unless he recognised the principle of the biological unity of the person.

Discussion.

DR. MILLAIS CULPIN said that attempts to correlate the psychical and allergic factors in asthma were almost unknown. He recalled two cases similar to that of Dr. Hansen. In patients subject to pathological states of anxiety there occurred, in response to specific or non-specific stimuli, attacks of *angst* or anxiety (there was no exact English equivalent) in which the objective signs of extreme fear were manifested. In some patients the symptoms appeared, not as *angst*, but as attacks of cardiac or gastro-intestinal disturbance. Like asthma, they might be cured by elucidation of the significance of the stimuli, or they might respond to any one of a multitude of therapeutic measures, or disappear spontaneously. The physical symptoms might act as the equivalent of anxiety; while the patient had cardiac, gastro-intestinal, or respiratory troubles he might be free from sensations of fear. The psychologist had no explanation why one patient should develop *angst*, another faintness and palpitation, another nervous polyuria, and another asthma when some stimulus stirred up an emotion unfitted to the circumstances. At present the allergic phenomena were to be interpreted as freakish manifestations of a biochemical Puck; any hypothesis that could correlate them with other manifestations should be welcomed by biochemists. Help in correlating them with psychic factors might be found in Pavlov's studies of the

conditioned reflex. In the presence of emotionally labile physiological reactions the setting up of a conditioned reflex might take place through allergic mechanisms. There was urgent need for coöperation rather than opposition between those working at different aspects of this problem.

Dr. R. D. GILLESPIE said that psychologists in this country had not much opportunity of seeing asthmatics, and there were few references in the literature to the purely psychological aspects. Psychogenic dyspnœa was not asthma, and the asthmatic type of dyspnœa was not part of the normal emotional reaction of *angst*. It seemed most probable that the asthmatic paroxysm was a constitutional peculiarity that was set going by physical or psychical factors.

Dr. E. P. POULTON related two experiences suggesting a psychological factor in migraine, and Dr. G. ORIEL described a mother who had developed urticaria while her daughter got angioneurotic œdema after the former had been chased by her husband with a revolver. The daughter had at the same time become egg-sensitive, but had lost this sensitivity when the parents had obtained a divorce.

Dr. A. CAWADIAS said he had seen asthma develop after strong emotion, but the patients had reacted to allergens and had been cured by diet and autohæmotherapy. The mechanism of correlation of psychic and allergic factors would probably be found when our ideas of the vegetative nervous system were more complete. There was probably a real organic neurological explanation of these cases—a fibre-connexion between the cortex and the viscera.

Dr. PARKES WEBER said that it was difficult to get away from the fact that psychical factors influenced asthma—among other diseases. The reaction towards any psychic factor of disease depended partly on the nature of the factor, but also largely upon the pattern of the individual, in many cases the pattern of the vegetative nervous constitution. The reaction varied according to the seed and the soil, and was exactly analogous to the effect of all physical agents, especially the milder pathogenic ones. There was no reason why asthma should be an exception to the general rule.

Dr. GEORGE GRAHAM asked what part adrenalin played in the reaction.

Dr. HAROLD AWROUNIN said that the sympathetic nervous system must be associated with the asthmatic attack, acting, probably, on the finer capillaries as it did in angioneurotic œdema, urticaria, perhaps in migraine, and probably in mucous colitis. This was why atropine and adrenalin were of value.

Prof. HANSEN, in reply, emphasised his opinion that definite sensitivity to certain substances only produced asthma if certain psychogenic factors were present, therefore the psychogenic factors influenced an illness of organic origin. Many allergic phenomena that were attributed to psychical origin might be traced to organic causes if research were continued. As many asthmatic reactions were not allergic at all, it was impossible at present to make any precise statement.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

A MEETING of this Section was held on Feb. 22nd, Mr. G. E. WAUGH, Vice-President, taking the chair. Dr. GERALD SLOT read a paper dealing with

THE WORK OF A RHEUMATISM SUPERVISORY CENTRE.

He had been impressed, he said, with the increasing importance of rheumatic fever in this country. Since the disease had been taken seriously among the school medical services 9000 cases had been registered; probably there were 24,000 in London alone. Cases came to a clinic from four sources: referred by school medical officers through the care committee; from private practitioners—and these in increasing numbers; by voluntary application of the parents to the head teacher; and as ordinary out-patients to a hospital. The duties of a rheumatism supervisory centre were: (1) The supervision of children suffering from rheumatic manifestations. (2) Recording on the school record card, or writing to the doctor or in some other way noting definitely whether or not the child was rheumatic. This was in many cases impossible, but at any rate the centre acted as a second opinion and was able to save unnecessary invalidism. (3) Instruction of parents on the importance of rest, modes of hygienic living, and the severity to the child's future of neglecting rheumatic disease. (4) The keeping of accurate records; these were usually based on Dr. Reginald Miller's schedule. (5) Arranging for treatment, whether by the private doctor, by a local hospital, or at one of the Metropolitan Asylums Board special hospitals, or in the local infirmary. In some districts the infirmary would arrange for continuing treatment under the doctor in charge of the centre. (6) Arranging for convalescence, and for reports from the convalescent home to complete the records. (7) Arranging the treatment of minor maladies, such as unhealthy tonsils. (8) Acting as a centre for research. The physically defective schools were an important element in the life of a rheumatic child, who could be sent to one of these on his return from the convalescent home. There he had no stairs to climb, education was not pressed, he could be taught a trade, and under statute law he could be kept until he was 16, so that his lost education was made up. The mortality before the age of 25 of cardiac children trained at physically defective schools was about 50 per cent.; of those sent to elementary schools it was about 80 per cent.

Method of Estimating Cardiac Efficiency.

The aim of a cardiac test was to secure some objective method of estimation which could be used to determine the efficiency of a heart on more than one occasion and by which a second observer could estimate the changes noted by the first. Vague terms and varied opinions made it very difficult to trace the history of a heart through other people's notes. The six factors taken were: reclining pulse-rate, standing pulse-rate, difference between reclining and standing pulse-rate, pulse-rate after standard exercise (touching the toes 20 times), time in which pulse-rate returned to normal, and difference between standing and reclining blood pressures. The fact that the nurse could take the pulse-rate obviated errors due to excitement at the doctor's visit. A system of marks varying from 3 to −1 was allotted to each test, so that a maximum of 18 could be obtained. Eight marks constituted a pass, 7 was doubtful, and below 6 some cardiac damage was indicated. The test was subject to the fallacies of all numerical tests, but had been based on a large number of cases, and it did give an index by which progress could be gauged from time to time. It was essential that the elements of a test should be obtainable in any bedroom, and elaborate clinical methods were therefore inadmissible. The test was especially useful in those cases where there was a rapid heart but nothing else. The heart that gave a poor response to the test often developed symptoms of damage later on. The scheme was put forward with all reserve and with no claim at all to finality.

Discussion of the Cardiac Test.

Dr. D. W. WINNICOTT described the points in which his rheumatism clinic at Queen's Hospital differed from that of Dr. Slot. They were particularly trying to avoid seeing too many children; they hoped to see a few very carefully and in time to be able to draw conclusions. He had not tried blood pressure estimations, but had found that the pulse-rate test was liable to fail just when it was most wanted. A child who did not seem frightened at the examination, whose fears were not quite conscious, might have flushed pallor, trembling, fever, and even growing pains, and might respond very badly to pulse-rate tests and yet never develop rheumatic disease. The pulse-rate might be lower in sleep, but some of these

children allowed themselves no quiet even in bed; they had nightmares and ran a rapid pulse all night.

Dr. ADOLPHE ABRAHAMS said that these tests did not test the heart qua heart and, in his experience, would break down in both directions. People who did badly at tests might be capable of considerable exertion, and vice versa. It was impossible to disregard the nervous factor. The problem of response to exercise was not merely one of the heart's efficiency, but was bound up with many other factors. These tests showed the efficiency of the individual for exercise, or perhaps just the tone of the vasomotor system. If tests could be devised to estimate the heart's efficiency they would be of great value.

Dr. MARGARET LOWENFELD described an attempt in Glasgow to estimate the efficiency of the heart in a large number of normal children of both sexes between the ages of 6 and 13. The work had been abandoned because of the extraordinary variety of results obtained. For instance, a perfectly healthy child of good heredity had given bad test results; it had subsequently been ascertained that she had that afternoon learned of her success in terminal examinations and the excitement had caused her heart to fail in the tests. A series of rheumatic children with definite cardiac affection had shown the converse; a child with considerable enlargement and a double mitral lesion had given a perfectly normal reaction after moderate exercise. Without a very careful examination into the neuro-physical character of the child illusory figures would be obtained from tests of this nature.

Dr. B. E. SCHLESINGER said that the physician of the convalescent home often had great difficulty in securing proper attention to the children after discharge if they could not be put under a supervisory centre. He thought that the American statistics were so elaborate and overwhelming that workers were likely to get lost in them. All kinds of factors entered into the pulse-rate, such as the time of day it was taken. As in "soldier's heart," recovery of rate and efficiency might occur with improvement in the general health. The problem was not so much one of testing cardiac efficiency as of recognising signs of rheumatic activity, and that would not be done by these tests. Much harm had been done by keeping children at rest for long periods unnecessarily. A point that might be of use was that the normal pulse-rate dropped 10 to 20 beats during sleep, while the night pulse-rate of the rheumatic child with active carditis approached that of the day.

Dr. T. W. PRESTON remarked that criticism of the paper seemed to be destructive rather than constructive. No one had suggested that a diagnosis could be made on this test, but in the majority of cases a heart that could pass it satisfactorily was a good heart. There might be exceptions, but as a rule the heart that was constantly rapid after exercise had something the matter with it. He would like to know how these "normal" children with hearts that failed to pass the test got on years afterwards; did they live to old age without any cardiac trouble? He had found these tests a very considerable help, and it would be unfortunate if the report went out that the meeting was unfavourable to them. The practitioner wanted to know how to keep a doubtful heart under observation, what he was to look for; a routine test of this kind would give him a great deal of assistance.

Dr. BERNARD MYERS asked whether the size of the collar round the arm made any difference to the blood-pressure readings and whether the instrument had been tested at Kew. Dr. Parsons Smith had been working at children's blood pressure and had found tremendous differences. The nervous child was a most important source of error. It was doubtful if any test would be of real solid value unless it could estimate the effective action of the pituitary.

Dr. E. A. COCKAYNE said he had tried some of these tests on soldiers and had been struck by the way in which patients with organic disease might pass them quite well, whereas many who had no enlargement and no organic disease did them very badly. So many rheumatic children had an unstable nervous system that these tests were merely picking them out from the remainder.

Dr. E. STOLKIND described his experience of these tests in a military heart hospital in London. In the majority of positive cases the only heart disease present was nervous.

Dr. F. S. SWINEY agreed that the tests were open to fallacy because the system tested was not only the circulatory but also the nervous and the respiratory, and indeed the whole organism, but thought nevertheless that at this stage it would be wrong not to give this promising method of investigation fair consideration and trial. It was important to remember that the closest coöperation must exist between the hospital giving treatment and the rheumatism supervisory centre, and that it was best to examine a few children thoroughly.

Flight-Commander E. D. DICKSON said that these tests, with others, were carried out on aviation candidates for the Royal Air Force, and that great importance was attached to them in passing men for flying.

Dr. HUGH STANNUS said that vasomotor instability was in itself a rheumatic manifestation. It would be very interesting if these children could be watched for a long period to prove whether or not they were rheumatic.

Dr. SLOT, in reply, emphasised that he had never intended the tests to be in themselves diagnostic; they were just one method to be used together with others. The child's parents could not be kept waiting indefinitely, and the doctor had to decide within a short time what kind of life the child was to lead. If he went wrong on these tests, at any rate he went wrong on the side of safety. The tests had been based on a large number of observations and the fallacies had not proved sufficient to warrant real mistrust of them.

Presentation of Cases.

Dr. W. G. WYLLIE presented two cases. The first was a boy of 8 who had fallen from a second storey window four years earlier. Six months after the accident obesity had set in and during the third year he had had frequent frontal headaches, nausea, and sometimes vomiting. He was always thirsty but had no polyuria. There was generalised adiposity, so that he weighed 81 lb. instead of the 54½ lb. normal for his age. His intelligence was unaffected and there were no abnormalities in the sexual or nervous systems.

The second child, a boy of 6, had fallen while racing upstairs, and in his case, as in the former, fracture of the base of the skull had been suspected at the time. A month or two later his appetite had increased enormously, but without thirst. He would gnaw bones if allowed. He passed 4–6 pints of urine daily, of low specific gravity, but without abnormal constituents. He had fairly frequent frontal headaches but no drowsiness or impairment of intelligence. His nervous system showed no anomalies and his weight and physical development were normal.

Dr. E. A. CROOK showed a case, with skiagrams, of abscess at the lower end of both tibiæ. For a time there had been no leucocytosis, but the temperature had not responded to salicylates. He had only seen one other equally symmetrical case—abscess of the second metatarsal shafts.

Dr. WINNICOTT said the child had first been brought to his clinic as a case of rheumatism, having been taken ill with swelling of the ankles and big-toe joints. When examined a week later his feet had been normal except for enlargement of the ends of the tibiæ.

The CHAIRMAN regarded this as one of those rare cases where the infective focus was really primarily epiphyseal. The difficulty of penetrating the cancellous tissue of the diaphysis had saved the child from a bilateral osteomyelitis.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

A MEETING of this Society took place at the rooms of the Medical Society of London on Feb. 22nd, the chair being occupied by DR. F. J. H. COUTTS, the President, when a discussion on the diagnosis and treatment of

NON-VENEREAL AFFECTIONS OF THE GENITALIA

was introduced by DR. H. C. SEMON. He first acknowledged his indebtedness for much of his material to J. Callomon's useful book, and remarked that he would discuss only such conditions as were seen by the dermatologist, and of which he had had personal experience. A number of cutaneous diseases, though not venereal in the ordinary sense, could yet be contracted through sexual intercourse. He set out to deal with them under the following six headings: (1) genital manifestations of the more important dermatoses; (2) pruritus anogenitalis; (3) genital dermato-mycosis and the epizoötic infections; (4) herpes genitalis, molluscum contagiosum, condyloma acuminatum; (5) non-venereal ulcers of the genitalia; (6) certain lymphatic affections.

(1) The delicacy of the epidermis covering the genitalia and the specialised structure of the scrotal skin gave small cause for wonder that the genitals were a common site for many of the *dermatoses which affected the rest of the body*. Of these the commonest was eczema. If this resisted the simple hygienic measures of proper clothing and protection and the application of soothing remedies the thoughts should turn to such possible underlying causes as pediculi, oxyuris, glycosuria, dysentery. The initial pruritus due to pediculi often resulted in severe dermatitis following the use of too powerful parasiticide ointments. The pediculus was easily killed by one or two applications of benzol. In obstinate ano-genital eczema in children the threadworm should be sought, while in stout women the urine should be examined for sugar, and bacteriologically for the colon bacillus. Hæmorrhoids and fissure in ano must not be forgotten as possible causes. A form of chronic dry eczema which favoured the genito-crural region was that termed neurodermatitis chronica circumscripta. Its character was lichenoid, it itched intensely, while owing to the difficulty in securing sleep, it was sometimes the precursor of a serious nervous breakdown. Each type of predisposing cause must be treated in its own proper way. In cases in which the acute symptoms had subsided there was no better "desensitisor" than X rays, but only under expert guidance, as in this region X ray dermatitis was more serious than in any other part. Sometimes psoriasis might involve the scrotum and penis only. Suppuration was rare and itching either slight or entirely absent. It might involve the glans and internal aspects of the prepuce. He emphasised the point that because *B. coli* were plentiful in the urine, or streptococci, these organisms were not necessarily the cause of the disease. After soothing remedies such as resorcin had brought about deturgescence the most efficient treatment was small doses of X rays. Lichen planus also showed a pronounced tendency to affect the mucous membranes, and the genitals might be the selected site. In cases of doubt the buccal mucosa should be examined for the "china-white streaks." The penile lesions in this condition did not ulcerate. Ordinary urticaria did not affect the genitalia alone, but Quincke's œdema was prone to attack the scrotum or one labium majus. The swelling was painless, and the absence of febrile disturbance and glandular swelling should obviate any attempt at surgery. Dr. Semon recommended intravenous injections of afenil (Knoll). Genital eruptions due to taking medicines were not usually recognised as such. They might be scarlatiniform, or morbiliform, or purpuric. The halogen derivatives, quinine in pessaries, and mercury if the patient was sensitive, were occasionally causal. The same drug might show different manifestations in various patients. Two other conditions—namely, erythema exudativum multiforme and pemphigus vulgaris—fairly frequently showed their primary manifestations on the external genitalia. Their onset was insidious and a complaint of pain was not usual. The outlook in erythema multiforme was good when the cause—usually buccal or intestinal sepsis—had been dealt with. Both these diseases had to be diagnosed from impetigo. It was very important to avoid confusion with syphilitic ulceration and cancrum molle.

(2) *Ano-genital Pruritus.*—There were two main categories of sufferers from it: the well-nourished, opulent, middle-aged man of sedentary habits: and the nervous, highly strung woman of temperate habits. The degree of pruritus varied enormously, from slight tickling at odd moments to itching of such intensity and persistence as to lead sometimes to psychical disturbance, occasionally ending in suicide or insanity. There were cases in which the most careful investigation was fruitless, and even X rays or radium failed to give relief. Among the possible contributories to be thought of were blood-sugar abnormality, leukæmia, morphinism, the cocaine habit, digestive disorders, idiosyncrasies to drugs and foodstuffs. No case should be lightly dismissed as hysterical and turned over to the psycho-analyst or to the unqualified radiotherapeutist. There was no standard line of treatment of cases of pruritus; each case must be investigated on the lines indicated. Of those with negative findings a considerable proportion yielded to X ray and radium treatment, and in one case which did not respond to these relief followed the injection, under general anæsthesia, of absolute alcohol.

(3) *Mycotic infections* of the genital area were very common, and should receive primary consideration when an irritating eruption occurred in this region. A cure rapidly followed the use of mild parasiticide ointments. Relapse was common.

Of the *epizoötic infections*, which included pediculi and the acarus of scabies, the latter was chiefly important because it was sometimes possible to diagnose a general infection on the presence of a single acarine burrow on the foreskin.

(4) The presumed ultra-microscopic virus of *herpes genitalis* could certainly be transferred, in the first instance, by coitus. The lesions were small grouped vesicles which ruptured rapidly, leaving small superficial denudations of the delicate epithelium of the glans or the labia, in which secondary infections were apt to occur. It bore no relation to herpes zoster. The lesions of herpes genitalis needed protection with indifferent lotions, powders, and the like, but it seemed impossible at present to prevent recurrences.

Molluscum contagiosum in the genital area did not differ from that elsewhere, and the treatment was surgical. The disease was contagious, had a long latent period, and could be conveyed by towels. Dr. Semon had seen two widespread cases which were contracted in a Turkish bath. *Condyloma acuminatum* affected the mucous membrane in preference to the skin. Favourite sites were the coronal sulcus in the male, and in the female the introitus vaginæ and labia minora. The small vegetating fungoid growths might coalesce and form a pedunculated cauliflower-like mass, in which secondary infection was common. It was conveyed in sexual intercourse, but did not rank as a venereal disease. It was very important to differentiate the cauliflower stage of this condition from fungating malignant growths.

(5) In regard to *non-venereal ulcers* Callomon's classification was useful. The first group were ulcerations following mechanical, chemical, thermal, or electrical influences. It included the ulcers contracted in coitus, the application of caustics to avoid venereal infection, self-inflicted wounds, and occasional accidents after diathermy. An X ray ulcer might be present, and total excision offered the only hope of permanent relief. The second group were the acute infective conditions. The acute tuberculous ulcer

was rare on the genitals; it occurred in cases of genito-urinary infection with quantities of bacilli in the urine. An anal ulcer infected from bacilli-containing fæces might spread forward and involve the posterior vaginal wall. Gangrenous ulcers on the genitals had a complex bacteriology, and the urine should always be examined for sugar. More than once he had cleared up such cases with salvarsan, and subsequently noted in those patients a positive Wassermann.

Discussion.

Dr. H. M. HANSCHELL said that the practitioner in the tropics found that lesions about the genitalia were very numerous. The leishmania sore might make its first appearance on the penis; he had also seen ringworm emerging from the end of a very long prepuce in a negro. A condition which he regarded as a true venereal disease, in that it was acquired in the act of sexual union, was that commonly termed the climatic bubo. It was very rare in temperate regions. The lesions were usually in the sulcus, and if swabbed with a lotion or with spirit there was almost instant healing. No one had yet discovered an organism in affected glands which had been excised and examined. He considered there was a true herpes which occurred round the prepuce and on the glans, distinct from that acquired in sexual union. Soon after the war he saw, in England, a few cases of ulcerating granuloma of the pudenda. The men had acquired the condition during the war; one of the patients had been for 18 months under treatment for chronic intractable syphilis. Meantime the ulceration had spread in each of these men through the abdominal wall into the bladder. Death occurred from exhaustion. The condition had not been described as occurring under the age of puberty, supporting the view that it was a true venereal disease. It began with a hard papule which closely resembled a syphilitic chancre. Early diagnosis was important, as when the lesion was small it could easily be excised. Usually a rapid cure was brought about by intravenous injections of tartar emetic. Elephantiasis of the vulva and penis had been seen in this country also. Cases which arrived in England often went to a surgeon, who proceeded to excise the obvious gland; then he found many deep glands were involved, down to the iliac vessels. All were removed. In two years the patient had elephantiasis of one leg, scrotum, and penis. Climatic bubo had not yet been reported as occurring in the female. It seemed to be connected with the prepuce. It did not occur in people who practised circumcision before puberty.

Dr. T. ANWYL DAVIES spoke of a common form of vaginitis, known as trichomonas. The bacillus did not stain well, and so was not usually detected. He had also seen vaginitis and cervicitis due to scabies.

Dr. F. C. DOBLE said he had seen cases of lichen planus confined to the genitalia, no lesions being seen in the mouth or elsewhere. It was his view that nearly all diseases in the tropics seemed to attack the penis, even leprosy.

Dr. W. S. SHARPE thought that herpes genitalis owned a variety of causes. He had always held there was some local reaction in the cutaneous nerve, or a toxic condition which caused the herpes on the glans. Diphtheroid infections in girls just before puberty caused a vaginal discharge, but never vulvitis or skin condition surrounding the vulva. It could be diagnosed naked eye because the discharge had an opalescent appearance, and did not set up an inflammatory reaction. The vaginal secretion in these cases was always very acid.

Dr. MARGARET RORKE agreed that pruritus ani was one of the most tiresome conditions to treat. Often a small focus of trouble had been missed in the early examination of the case, and then gradually larger areas of skin became involved, and the ultimate cure was very difficult, sometimes only with the aid of X rays.

Dr. DOROTHY LOGAN spoke of a woman who had most intractable pruritus of vulva and anus for 18 months, who was shown to have anal gonorrhœa. There was marked erosion of the cervix and an irritating discharge from that. No gonococci were found, but she had no doubt about the diagnosis.

The PRESIDENT, reviewing the discussion, said he had been struck by the number of the conditions for which X rays seemed to be valuable. It was, however, a means which must be applied with care and by an expert.

Dr. HANSCHELL and Dr. SEMON replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

AT a meeting of this Section on Feb. 8th Sir WILLIAM WHEELER took the chair in the absence of the President, and a paper on

Rectal Narcosis with Avertin

was read by Mr. F. J. MORRIN, who said he had used avertin as an anæsthetic in 54 cases, the oldest patient being 69 and the youngest 3. Excluding four cases in children in which the avertin enema was not retained, anæsthesia was unsatisfactory in only one case, an alcoholic subject. It was light in eight cases—but this did not prevent completion of the operation—and was satisfactory from the operative standpoint in the remainder, though of varying depth. Two cases showed a marked fall of blood pressure, long post-operative sleep, and a weak and rapid pulse which was not restored to normal for four days—symptoms obviously due to overdosage. Thirty-six were cases of advanced carcinoma of the tongue and face, suffering from cachexia, and unsuitable for any other form of anæsthesia. These were cases of what was ordinarily called "inoperable carcinoma," and were treated by diathermic coagulation. Such coagulation of cancerous growths was done with a very powerful diathermy apparatus, and required very deep anæsthesia. The danger of ignition made ether objectionable. Avertin allowed access to the growth and free intraoral manipulation. Mr. Morrin was very favourably impressed with the efficacy of the new drug, and said it was the anæsthetic of choice in toxic goitre. A brief experience with avertin amylene hydrate led him to regard it as a more effective anæsthetic agent, giving better abdominal relaxation and more certain anæsthesia; it was associated with shallow respiration, and was less liable to be attended with a fall of blood pressure. No post-operative bronchitis or pneumonia was observed, despite the fact that many of these aged patients were operated upon for disease of the mouth and pharynx. Care was necessary in preparing the solution accurately, and the dose of 0·1 g. per kg. of body-weight should rarely be exceeded. When it was necessary to increase the dose cautious fractional administration was advisable. Overdosage might possibly occur where the body-weight was decreased by operative removal of a large amount of tissue—e.g., amputation of a limb—in a subject of poor vitality.

The CHAIRMAN remarked that with avertin the patient apparently passed into a somnolent state within ten minutes. This was very different to anæsthesia with oil-ether, the great difficulty about which was the varying time it took to act. An operation under oil-ether could not be timed within three-quarters of an hour, as some patients went under much quicker than others. There was apparently no antidote to avertin, and there was a greater fall in blood pressure than when oil-ether was used. The better administration of avertin was, he thought, a matter of experience. He was interested to note the absence of post-operative symptoms following its use, as after oil-ether patients were sometimes very sick and some developed bronchitis.

Dr. J. BECKETT said that he had always regarded oil-ether as a very satisfactory anæsthetic, and had not found that patients vomited much after it. There seemed to him to be a great deal of complicated technique in giving avertin. The oil-ether method was very simple.

Mr. W. DOOLIN offered his congratulations to Mr. Morrin on being the first surgeon outside Germany to have had an opportunity of testing the new drug. The intention of the German authorities that avertin should not be available for general use until it had been given an exhaustive trial in competent hands was praiseworthy. Opinions in Germany as to its use were very divided. Amongst those using the drug, its method of employment was twofold: it was used either as a basal narcotic, preceded by other narcotic drugs, and with additional ether administration, or else as the sole narcotic medium, and it was in the latter group that most accidents had occurred. To judge from published reports, the difficulties of administration were rather more serious than Mr. Morrin had stated; it has been repeatedly stated that even slight errors of technique might lead to serious effects in patients. The chief dangers were overdosage and overheating; the rapid fall of blood pressure had led to fatal secondary hæmorrhages in a few cases; fatal colonic necrosis had been reported as the result of overheating of the drug before injection. Many observers working with the drug had admitted that the chief disadvantage was the fact that it was impossible to "steer" the anæsthesia so produced. Some had considered that the dosage by body-weight was unsatisfactory; it was impossible to state at any time how much of the drug injected had been absorbed into circulation. Its advantages were enormous when the anæsthesia was successfully performed. The abolition of vomiting during and after operation was beneficial to the patient, particularly so in the case of children. Reports in German literature during the past two years showed a marked falling off of post-operative pulmonary complications. There seemed little doubt that, notwithstanding certain dangers alluded to, avertin was a great step forward in the technique of anæsthesia.

Dr. P. MACCARVILL, who had assisted Mr. Morrin when he started using avertin, said that a 3 per cent. solution had been used, but it had been found difficult to get the powder to dissolve, and later they had used a 2·8 per cent. solution. The fluid was heated first to 45° C., and cooled to 40°. The first time he had given avertin he had been rather alarmed, as the patient's blood pressure fell and the breathing became very shallow; but the operation was quite successful. Avertin seemed to him to some extent a phasic anæsthetic; at one time the patient appeared to be very deeply anæsthetised and at another not so deeply. When administered with care he regarded it as invaluable.

Mr. A. A. MCCONNELL said that so far nothing like an ideal anæsthetic was known, and a good many of the objections to avertin applied also to ether. He referred to the possibility of using diathermy in the mouth when rectal ether was being employed, and said that he had been doing this for years without encountering any difficulty.

Mr. MORRIN, in reply, said he had tried rectal oil-ether extensively, and thought that there was no comparison between the two anæsthetics. There were many dangers from oil-ether also. There was no great technical difficulty in preparing avertin. The mortality following its use had occurred in the early stages when too big doses were given, and when it was used in cases of hepatic and renal disease. Where the blood pressure fell very low he had found that ephedrine controlled the fall. He had never seen a case of secondary hæmorrhage after avertin anæsthesia.

Mr. R. A. STONEY read notes on a case of cholecystocho-duodenostomy, and a discussion followed.

Dr. HORACE LAW showed a steel pin which he had removed from the bronchus of a child of 7.

Reviews and Notices of Books.

CYTOARCHITECTONICS OF THE HUMAN CEREBRAL CORTEX.

By CONSTANTIN VON ECONOMO, Professor of Neurology and Psychiatry, University of Vienna. Translated by Dr. S. PARKER. London: Humphrey Milford, Oxford University Press. 1929. Pp. 186. 21*s*.

"The Cytoarchitectonics of the Human Cerebral Cortex" is a translation, not, as one would infer from its title, of Economo's monumental work, "Die Cytoarchitektonik der Hirnrinde," but of his smaller and later book, not specifically mentioned in any place in this volume, "Zellaufbau der Grosshirnrinde." This is not made clear on the title-page. The smaller book received immediate recognition at the time of its first publication in the German two years ago, and it has already been translated into several languages. The first translation, the French version by Dr. Ludo van Bogaert, set a very high standard. A master both of cerebral anatomy and of the art of lucid writing, Dr. van Bogaert reproduced every refinement of the meaning of the original, and rendered this intricate subject more easy to follow by the clarity of his expression and by the explanatory heading with which he preceded each section. The result is a book which may become a French medical classic. Nothing comparable can be said of the English version. In the first few chapters, which are the most difficult part of the book to understand, there are passages so obscure that we have been able to discover their meaning only by reference to the original. The later chapters, consisting of more straightforward descriptions, are less difficult to follow, but the translation will not completely satisfy those English readers who are not in a position to turn to the original work.

Prof. Economo undertook anew the work that had been done by Brodmann, Campbell, and others, examining in detail the cellular structure of every part of the cerebral cortex. The great value of his work, apart from confirmation of earlier findings, is that it brings into the mass of detail an orderliness which simplifies the whole subject. While the six fundamental layers can be recognised in the cortex of practically every part of the brain, they vary from place to place to such a degree that essential similarities may not be recognised; Economo shows that three characteristic formations—the frontal, parietal, and temporal types, with slight modifications within their respective areas—cover a large fraction of the brain surface; two other types, the one abounding particularly in granule cells, the other in pyramidal cells, compose the rest of the neo-pallium. In general, cortex of receptive function is "granulous," and cortex of effective function is "pyramidal" or "agranular." The rhinencephalon and its adjuncts have, as is to be expected from its development, a very different structure.

The study of structure is one of the methods by which we shall gradually enlarge our knowledge of the localisation and integration of function in the brain, and Economo's work is a great contribution to neuro-anatomy. In this volume there are numerous illustrations, most of which are photographs in which detail is essential, and they are all well reproduced. The text teems with technical terms and we have found no misprints.

PHYSICS FOR MEDICAL STUDENTS.

By SIDNEY RUSS, D.Sc., F.Inst.P., Joel Professor of Physics to the Middlesex Hospital Medical School; Physicist to the Middlesex Hospital; Fellow of University College; Fellow of the Royal Society of Medicine. Edinburgh: E. and S. Livingstone. 1928. Pp. 230. 10*s*. 6*d*.

THERE exist already a large number of elementary books, which set out to help the student through

his preliminary studies in physics. There is ample justification, however, for the production of another by an experienced teacher who is inspired with a desire to interest medical students in a subject which is becoming increasingly important as a grounding for the later subjects of their curriculum. Throughout this new text-book is a medical bias; without dragging in so-called "medical applications," Prof. Russ illustrates his topics in a natural way by means of examples drawn from medicine. The student, who is often disposed to regard his year of instruction on the basic sciences with impatience, will appreciate this method of helping him to grasp the bearings of physics on his chosen life-work.

An unusual feature is the policy of omitting examples other than those in the body of the text. Zealous students will refer to special books and to papers set in previous examinations to make up for this defect; the less enterprising ones may welcome the omission of exercises usually included at the end of each chapter in elementary text-books of physics, and decide that it is unnecessary to test their knowledge. However, since the majority of the readers of the book will be attending lectures and practical classes in physics, it can be assumed that a suitable selection of numerical and other problems will be supplied by their teachers.

The work is well produced, is attractively printed, and has a good supply of clearly drawn diagrams, which, with the exception perhaps of Figs. 71 and 73, greatly assist the author in his concise exposition. Figs. 71 and 73 show the passage of light through a prism, in which dispersion takes place at one surface only; and the emergent violet beams seem to have become divergent.

The student will welcome a book which does not assume that, at the moment, he desires to study physics far beyond the requirements of his syllabus. The teacher will appreciate the fact that though the work is concise, it is not a mere cram book. The chapter on radioactivity and X rays is notable as one of the best summaries of our present knowledge that we have seen; in itself it would justify publication of the book.

PHOTOGRAPHS OF THE FUNDUS OCULI.

A Photographic Study of Normal and Pathological Changes Seen with the Ophthalmoscope. By ARTHUR J. BEDELL, M.D., Member of the American Ophthalmological Society. Philadelphia: F. A. Davis Company; England: Stanley Phillips, Billericay, Essex. 1929. An atlas containing 95 plates, 324 single pictures, and 272 stereoscopic photographs. Pp. 317. £5 5*s*.

To most ophthalmologists the contents of this book will come as a revelation. Hitherto, in order to preserve an impression of a fundus, we have had to rely on hand drawings, in pencil or water colour, which involve technical skill and a fatiguing ordeal for the artist who has to display patience. It is true that the result is often excellent, but the necessary expense and trouble involved render it hopeless to expect that this method should be made applicable to a large number of cases. Moreover, some of these pictures succeed better in emphasising the points that the surgeon desires to have emphasised than in conveying a strictly true objective representation of the facts. In this volume, on the other hand, we have a vast number of actual photographs of fundi which show clearly and without the possibility of bias the appearances as revealed by the ophthalmoscope. There are only two drawbacks. These pictures, being photographs, are in black and white, the various shades of red, white, and yellow actually seen with the ophthalmoscope being represented merely by varying shades. The other drawback is an unavoidable reflex of the carbon source of light (the pictures are taken with the carbon-arc lamp) which appears in the centre of the plate—in these pictures generally between the disc and macula. This volume, the first of its kind in English, contains a selection from 4000 photographs made with the Nordenson camera of Zeiss. The author acknowledges his debt to previous workers in the same field, and especially to F. Dimmer and to J. W. Nordenson, of Stockholm, the latter of whom demonstrated the method at the International Congress of Ophthalmology held in Washington in 1922. The photographs show a big assortment of varieties of normal and diseased fundi, and since a large proportion of them are stereoscopic it is possible to obtain a sense of relief that makes them in this respect even superior to the view ordinarily obtained with the ophthalmoscope. There is a foreword of 33 pages which explains the principles on which the collection of photographs is arranged, and to each photograph is appended a brief note of the case from which it was taken and the chief points which it is designed to illustrate. In some cases there is more in the description than can easily be made out in the photograph.

The foreword has been compiled without sufficient care, since in several instances the references to particular figures in the text are wrong. The errors should be corrected in a second edition.

FROM CLOUD TO SUNSHINE.

By ALFRED S. GUBB, M.D. London: Baillière, Tindall, and Cox. 1928. Pp. 128. 3*s*. 6*d*.

Dr. Gubb's volume on Algiers and Algeria as a Winter Resort is now in the eleventh edition, which proves it to be a useful guide to the physician and also to a wider circle of readers. In addition to information about the climate and the facilities for travel and recreation, the historical, archæological, and geographical descriptions are of general interest. The book contains a useful map, and practically every page is illustrated.

JOURNALS.

JOURNAL OF INDUSTRIAL HYGIENE, January 1929. The fate of old employees is discussed by W. I. Clark, who investigated the conditions of workers aged 65 years and over and of pensioners connected with a large factory. He concludes that, while pensions are necessary, they are unsatisfactory, and that by means of medical supervision and careful placement older workers may be advantageously kept at work. He found that the physical condition of workers aged 65 years and over varied little from year to year. Work is always more pleasurable than a pension.—An effort is made by C. O. Sappington to evaluate physical defects found at medical examinations. He adopts a grading scheme for assigning a numerical value to physical defects. On this basis he found that those applying for industrial work had scores with a mode at 85, as compared with a mode of 95 for university men. This is supposed to demonstrate that physical and mental make-up are closely correlated.—The physiology of industrial fatigue is effectively portrayed by R. J. S. McDowall. The subject is shortly and clearly set out so that it may be easily grasped.—The longest and most important article in this number of the journal is contributed by H. W. Armit on the development of industrial hygiene in Australia. Some account is given of the growth of industry in that continent, and of the relation between trade-unions and health conditions. The Commonwealth itself has established a Division of Industrial Hygiene for assisting to solve problems which may arise in the various States. Some report is given of investigations already carried out by the staff relating to the occurrence of dust diseases and lead poisoning. Though employers are still slow to grasp the value of the new science of industrial hygiene, which creates a spirit of willingness in the workers, Australia has made a good start on a sure foundation.

THE LANCET.

LONDON: SATURDAY, MARCH 2, 1929.

THE PREVENTION OF INFLUENZA.

THE virus of influenza is usually, if not always, transmitted by the droplets that are sprayed into the air with every expiration of an infected person. Strict isolation should therefore be an effective means of preventing the spread of the disease, and it is well to consider how far it has proved useful. In 1918 an attempt was made to prevent infection getting into Australia from the many heavily infected ships lying in harbour there. Enforcement of strict quarantine regulations achieved this object for three months, and the measures taken were thought so satisfactory that when influenza did at last break out in the Commonwealth the suggestion was made in all seriousness that it was due to an endemic virus rather than to a breakdown of quarantine. S. MONCKTON COPEMAN has reported the case of a school near Cambridge which remained free from infection during the whole of the autumn term of 1918. This was attributed to the pupils being forbidden to enter the town, where influenza was prevalent, and when the embargo was removed in the following term three-quarters of them contracted influenza within a fortnight of infection being introduced. Many instances also have been reported in which individuals and families have eschewed all contact with the world outside their houses and have thus escaped attack. Such examples illustrate the conditions under which rigid isolation is likely to be successful, but they serve at the same time to emphasise its limitations in practice. Once an influenza epidemic has broken out, the isolation of all infectious cases from the rest of the population—in contradistinction to isolation of the fit from the infected—is impracticable if not impossible. There are instances, it is true, in which isolation of patients is said to have checked an epidemic; thus H. JENSEN, in 1918, on an island of 750 inhabitants, isolated the first (and only) 12 cases of an influenza outbreak and enforced the wearing of masks and overalls on all who attended them. But there is no evidence that in large communities the notification and isolation of patients has had any appreciable effect on the total incidence of influenza. In many epidemics a large proportion of cases, perhaps sometimes more than half, are so mild that the sufferers are able to continue their usual avocations. Again, although the causal organism of influenza has not been identified and therefore the existence of carriers is hypothetical, it is probable that healthy distributors of the virus play a part in spreading infection. For these reasons notification and isolation of cases, even if machinery were available, would be unlikely to affect the general morbidity appreciably. Under the rather exceptional conditions of ship life J. H. L. CUMPSTON found that taking the temperature of the whole ship's company daily, with prompt removal of all who felt ill or who had any fever, did not prevent attack rates ranging from 30 to 89 per cent. Even when allowance is made for the close contact of those on board ship, it is hardly conceivable, in face of the failure of this routine, that any measures for the discovery and segregation of infected individuals which could be enforced in a big city would do much to lessen the incidence of epidemic influenza.

The value of vaccine prophylaxis in influenza from the first seems very doubtful, for even an actual attack of the disease apparently confers only a feeble and fleeting immunity. Admittedly the statisticians responsible for the Ministry of Health report on the 1918 pandemic came to the conclusion that "a naturally acquired immunity is often a valuable safeguard," but they could find no significant statistical evidence that the vaccines in use before the time of writing (1920) were in any way protective. Grave difficulties stand in the way of collecting reliable data on the efficacy of such prophylaxis, and even were it possible to prove that at a certain time and place one antigen was useful, there is no knowing whether it would be a success in the next epidemic or the next town. Owing to the extraordinary variability of the clinical picture and morbidity of influenza at different times and places, one must look with suspicion on the claims of those who hold that a vaccine has proved itself effective because it seems to have modified the severity of an attack. It is natural that clinicians with the acute pulmonary infections of 1918–19 still in mind should be inclined to attribute the mildness of their cases nowadays to better treatment or to prophylactic inoculation. The *post hoc ergo propter hoc* argument dies hard in medicine, and a good instance of its fallaciousness given by E. D. JORDAN relates to this very disease. In a group of 234 men, 101 got influenza within a few days, and it was at once decided to inoculate the remainder. For some reason this was not done; yet only one further case developed. If the vaccine had been used it would have been only too easy to convince the majority of medical men that the course of the epidemic had been, to some extent at any rate, influenced by active immunisation. In considering this difficult subject we must remember, too, that if inoculation is followed by an increase in morbidity it does not necessarily mean that the antigen is useless, for the incidence of the disease might have been still greater if it had not been employed. Even should vaccines do nothing to prevent attacks, they may sometimes limit the duration, severity, and complications of the disease, and hence it is reasonable that people should be given the chance of taking or refusing prophylactic inoculation after they have been warned that nothing is known for certain about its efficacy. The absence of any consensus of opinion on the value of vaccines prevents the profession from commending inoculation to the general public, but an efficient prophylactic would be such a boon, especially in schools and the public services, that every effort should be made in suitable places to continue the administration of influenza and catarrh vaccines under controlled conditions which will make it possible to judge their value fairly.

The question whether schools and places of entertainment should be closed during an epidemic is also unsettled. Influenza is so infectious that closure of day schools possibly has little effect on its incidence, since the disease is likely to be contracted by children

playing together in the streets or in their homes. On the other hand, where pupils sleep together in dormitories there is sometimes a very high attack rate and a serious type of case; and this makes it seem inadvisable for residential schools to reassemble, if an influenza epidemic has broken out during the holidays, until infection has subsided. Should such an epidemic manifest itself in term time, it may be possible, as COPEMAN'S report suggests, to prevent access of the virus to the school; but if quarantine should break down it appears unwise to spread the local strain of influenza abroad by disbanding the children to their homes. To close places of amusement is a theoretically sound policy, but probably has little effect on total incidence; it is, therefore, as a rule, uncalled for save in malignant epidemics which are so serious that the public will cheerfully accept restrictions of this kind. The general use of masks has been tried in America but was not a success; their inconvenience and disfigurement outweighed any obvious advantage. For all that, an efficient mask intelligently used is an excellent defence against droplet infection, and eight layers of surgical gauze will hold up all infective material. They have an undoubted value for those who have to attend or visit patients with serious and complicated influenza, but they must be used sensibly and must be frequently sterilised, for if their outer surface gets contaminated and they are put on back to front they become a danger rather than a safeguard. A German writer has lately advised plugging the nostrils with wool, but this would rather increase than diminish the risk of infection, for it would encourage mouth-breathing and thus lower the vitality of the nasal mucosa. Most authorities agree that wholesale administration of drugs such as quinine, iodine, and mercurials cannot do any good, even if it does no actual harm, and there is a growing disposition to include gargles and nasal douches in the same category. Failing any such measures of proved practical utility, the central health authorities have had to fall back on asking the public to obey the ordinary rules of personal hygiene, hoping that by this means individuals will to some extent be able to protect themselves. Though most people who have to work cannot avoid crowds and shun the company of all who have coughs and colds, they can usually diminish the number of such contacts; they can refuse to go to places of amusement and to fulfil social engagements, and they can avoid paying unnecessary visits to sick friends. Over-fatigue and malnutrition almost certainly predispose to infection. It is true that R. A. SPAETH found that exhausted rats, provided they were allowed to feed, were no more susceptible to inoculated infection than controls, but A. E. BOYCOTT and C. PRICE-JONES, while confirming SPAETH'S observations, showed that if the infective material was administered in the food instead of hypodermically, the fatigued rats died where the controls survived, which is more in harmony with clinical experience. Despite the fact that epidemic influenza occurs as readily in the tropics as in cold climates, all practical experience points to the danger of chill and undue exposure to cold, especially in association with exhaustion. To avoid these—though not at the expense of ventilation—is therefore sound policy, and will do something to prevent dangerous pulmonary complications.

There is little reason to suppose that any practical measures have much effect on the total morbidity of an influenza epidemic; avoidance of close and frequent contact with infectious foci probably tends rather to prolong the outbreak than appreciably to diminish the total number of persons attacked. But even in the most crowded institutions the attack rate rarely approaches 100 per cent., and some people manage to avoid all symptoms, although constantly exposed to infection. This observation suggests that escape from the disease is seldom due to escaping all contact with infection, and we are obliged to believe that those who pass through epidemics unscathed do so because they have acquired some degree of immunity. Such reasoning leads to the fatalistic conclusion that a person must either be immune to the local virus or ultimately succumb to influenza, and on this it may be argued that it is useless to take precautions, so why not seek infection and get it over? The reports of COPEMAN and CUMPSTON, already quoted, somewhat favour such an attitude, for in both cases a community was submitted to much inconvenience and escaped for a time, only to suffer in the long run like everyone else. Indeed, if it were certain that the size of the infecting dose of virus, or the period over which it is given, made no difference to the result, and if we were sure that escape from an attack, or the type of illness, was only determined by the innate resistance of the individual, then the advice not to trouble about avoiding infection might be sound; if all epidemics of influenza behaved like the pandemic of 1918 the immunity conferred by an early attack, even if only slight and transitory, might give protection against the severe pulmonary infections to be expected in the later epidemic waves. But we have good reason to believe that catching the disease, and its severity when caught, depend to some extent on the dose of infective material. Therefore if people take all the precautions to avoid infection that are consistent with their mode of life, although they may not succeed in escaping an attack of influenza, their illness will probably be milder. Moreover, if there is any truth in the theory that a temporary immunity can be acquired by the inhalation of subinfective doses of the virus, it is conceivable that those who take as much care as they can to avoid infection and keep themselves fit will gain an amount of immunity which, even if it does not carry them through the epidemic, will moderate the intensity of their symptoms if they finally succumb.

Influenza is usually a trivial disease, and only a minority of patients suffer from dangerous pulmonary complications or have a really severe illness with unpleasant sequelæ. But owing to the high general attack rate and the clinical characters of special outbreaks, such serious cases may at any time become numerous. Whilst it may be impossible to do much to lower the total incidence, conformance to the common-sense rules of health and behaviour laid down by the Ministry of Health may well do something to reduce the severity and mortality of the disease, by preventing massive doses of infection and by keeping the body in a fit state for combating infection once it is established. In conclusion, we may say that the victim of influenza who does not go straight to bed is both fool and knave. He is a knave because he goes on spreading infection among his associates, and a fool because he is risking a long illness with its resultant loss of time and money, or even death, instead of submitting to a day or two's discomfort in bed. Everyone who had any clinical experience of the 1918 influenza must have seen many tragedies, in which a strong man, from a mistaken sense of duty, kept going at his work in spite of fever, only to collapse later and die of broncho-pneumonia within a few days. Fortunately, the present epidemic is less virulent, but the lesson is still applicable and its wisdom is proved by error every day.

WASSERMANN v. VERNES TEST.

THE Wassermann reaction is constantly being quoted in controversies as to the application of scientific discoveries to medical practice, and may be used with deadly effect by either side. For while it is common knowledge that the theoretical ladder on which the test rose to fame has long been discarded as unsound, the practical utility of the reaction to determine whether a patient has had syphilis in an active or latent form is unquestioned. In fact those who habitually work with this test in a laboratory are often dismayed at the unbounded confidence placed in their findings, since the test is complex and difficult to carry out and its reliability depends on other factors besides the experience and judgment of the pathologist. Even when the test is made in laboratories where routine procedures are most carefully standardised under the direct personal supervision of an expert, the reaction given by a patient not actually undergoing treatment may vary in an unaccountable manner; one week the reaction may be a strong positive, and the next it may be found weakly positive, or perhaps even negative. This may, of course, be due to alternations of the reaction in the patient himself, but other explanations may be given, as has been brought out recently by JOHN A. KOLMER.[1] He mentions, for example, that the composition of the distilled water used may effect the test; traces of magnesium salts are necessary for the reaction, and in certain localities it may even be desirable to use sterilised tap water in preference to distilled water. So apparently trivial a matter as the addition of amboceptor and corpuscles separately, or simultaneously in the form of sensitised corpuscles, also makes a difference. Dr. F. GRIFFITH and Dr. W. M. SCOTT showed in 1920[2] that there is no constant relation between hæmolytic activity and fixability, and, moreover, that the behaviour of a complement towards antigen alone is no indication of what will happen when it is brought into contact with the serum-antigen complex. Further experience in the technique of this test has not disposed of these uncertain factors. Moreover, much discussion has raged over the properties of different antigens. Some workers prefer plain extracts, others fortify these with cholesterin, others again remove the acetone-soluble fraction of plain extracts, and yet others use only the acetone-soluble fraction. Two years ago a series of comparative tests were performed by pathologists working in different laboratories, all of whom used substantially the same technique. The results differed by as much as 25 per cent.

The inference from all available evidence is that the Wassermann test is so complicated as to require the undivided attention of a specialist who must carefully watch each phase of the control standardisation of the ingredients and each stage of the test. This work is almost too tedious to be expected from a hospital pathologist who has any other duties to perform. It is clear that if a simpler method than the Wassermann reaction could be evolved which was no less reliable, it would be a boon to laboratory workers. The flocculation tests, which require fewer reagents, are still on trial. The latest of these to attract attention is the Vernes test, of which Dr. WANSEY BAYLY gives an account on p. 434 of our present issue. In this test the readings are made quantitatively, with an optical instrument of considerable delicacy. At the Technical Conference on Serum Tests for Syphilis, held at Copenhagen in May, 1928, under the auspices of the Health Committee of the League of Nations, where reports on the merits of the different tests employed were considered, the Vernes test was included for the first time in formal international discussion. The report of the proceedings of this conference is likely to be published shortly, and the verdict on the Vernes test will be awaited with interest. One advantage of this test is its long range of possible readings which, if they could be correlated with the clinical condition of the patient, would give a delicate estimate of progress. It is true that the exact relation of the degree of strength of the Wassermann positive readings to the severity of infection is unknown. But in practice a strongly positive reaction is regarded as an indication that the patient is not reacting to treatment, and the aim of the doctor in charge of the case is not only to ameliorate the patient's clinical condition, but also to render the Wassermann reaction permanently negative. The longer range on the Vernes scale might make it easier to correlate clinical condition with laboratory findings. The Vernes apparatus is now in use in France, Spain, Italy, Belgium, U.S.A., and South America. In this country it is being tried out at St. Mary's Hospital, at the Hospital for Sick Children, Great Ormond-street, and at St. John's Hospital, Lewisham, as well as by individual pathologists in their own laboratories. The fact that the antigen is issued from a central source reduces the number of variables to be contended with, and will facilitate the comparative investigation of the test. It is not necessary to prove that this test is more delicate than the Wassermann reaction to secure its widespread use. If it turns out to be no less sensitive and trustworthy it will be adopted with enthusiasm.

[1] Serum Diagnosis by Complement Fixation. Philadelphia, Lea and Febiger, 1928.

[2] The Technique of the Wassermann Reaction. Ministry of Health Reports on Public Health and Medical Subjects, No. 1.

THE TENURE OF POSTS UNDER LOCAL AUTHORITIES.

Do the medical officers of health of urban district councils realise that they can be dismissed at a moment's notice? This startling position is established by the decision of Mr. Justice McCardie in Brown *v.* Dagenham U.D.C., a case of which the hearing began on Jan. 23rd and in which judgment was not given till Feb. 22nd. Mr. W. H. Brown held the posts of superintendent-assistant overseer and clerk to the council. He claimed damages for alleged wrongful dismissal, complaining that he had been the victim of a conspiracy by certain Socialist members of the council who could not forgive him because he had stood for law and order during the General Strike in 1926. The council's defence was that Mr. Brown had resigned from the clerkship and had been dismissed from the assistant overseership for neglect of duty and inefficiency. The judge found that Mr. Brown did not resign from his clerkship, but that the defendant council had a right to dismiss him at will from both posts.

On the case first coming on, the judge tried to induce the parties to settle the matter; when it nevertheless proceeded, and defendant's counsel argued that the local authority had power to revoke any appointment without notice, the judge observed that, if this were correct, "every town clerk, however eminent, every medical officer of health, however distinguished, and every treasurer could be ignominiously dismissed to-morrow without notice." The judgment has now confirmed the correctness of this

contention. What made Mr. Brown's case particularly hard was that he held his appointment under a minute of the defendant council stating that it was "subject to three months' notice on either side." There was no written contract otherwise between the parties, but a local government official would hardly expect a local authority to repudiate its own minute. Mr. Justice McCardie's decision means that the minute was ultra vires and worthless. Section 189 of the Public Health Act, 1875 (under which Mr. Brown was appointed as clerk) says: "Every such officer and servant appointed under this Act shall be removable by the urban authority *at their pleasure*." This gives the local authority a power of dismissal similar to that possessed by the Crown, a power which cannot be negatived or impaired by any contract of service. Mr. Brown's appointment as assistant overseer rested on Section 5 (1) of the Local Government Act of 1894; this enactment does not contain the despotic phrase "at their pleasure," but the power of revoking an appointment is in the widest terms. The judge has held that an appointment under the 1894 Act can be as summarily terminated as one under the 1875 Act; Mr. Brown could be dismissed at any time without cause given and without notice. The result was that his claim for wrongful dismissal failed.

The questions of fact—whether he resigned or was dismissed, and whether he was guilty of misconduct or not—were heavily disputed. At various points the judge seems to have taken the view that Mr. Brown was right and the council wrong. After the date of the purported resignation the council gave him three weeks' leave, but omitted to pay him the three weeks' salary. This latter sum he has been awarded by the court; it had been paid into court with a denial of liability; the judge says it would have been more proper and generous if there had been an admission of liability. Mr. Justice McCardie has further stated that Mr. Brown's dismissal was not only harsh but also unjustifiable, and that the charge of misconduct was "very unfortunate both in its wording and its object." The judge, however, could not say that the council had acted dishonestly nor did he find himself entitled to substitute his own opinion for the council's almost unanimous view. In making these criticisms he went perhaps somewhat out of his way, since his decision that the council possessed an arbitrary power of summary dismissal was the turning-point in the case. The criticisms are noteworthy as a reminder that the officer of a local authority cannot always rely upon fair and generous treatment, but may find himself exposed to unexpected antagonisms when the political atmosphere is heated. The judge's order that both sides should pay their own costs doubtless marks his view of the merits and equities of the successful defence. Meanwhile medical officers of health, who are in exactly the same precarious position as Mr. Brown, can hardly be content with their defencelessness. The critical words "at their pleasure" in Section 189 of the 1875 Act seem, by virtue of Section 190, to be applicable to the medical officers of health of rural as well as urban authorities. The position of county medical officers of health is different, since by Section 68 of the Housing, Town Planning, &c., Act, 1909, county councils can remove them only with the consent of the Minister of Health and not otherwise. In a county borough, where any portion of the salary of the medical officer was paid out of moneys voted by Parliament before it was constituted a county borough, the whole-time medical officer has a safeguard under Section 1 of the Public Health (Officers) Act, 1921. He is removable by the authority only with the consent of the Minister, or else by the Minister himself, and not otherwise. If the legal decision in Brown *v.* Dagenham U.D.C. stands, the insecurity of non-county medical officers will certainly be for Parliament to rectify. Is any step being taken in the Local Government Bill to secure the tenure of all medical officers in terms which are clear and universal?

Annotations.

"Ne quid nimis."

THE ROYAL SOCIETY.

THE Council of the Royal Society, at a meeting on Thursday, Feb. 21st, recommended 15 candidates for election into the Society, among whom several have done work directly or indirectly connected with medicine. The election of Dr. Frederick William Twort, superintendent of the Brown Animal Institution, will be regarded widely as a fitting recognition of his long career of research in the course of which his name has been identified, but not over generously, with a pathological discovery of high importance. Dr. John Mellanby, professor of physiology in the University of London, is known for his studies on digestive enzymes and hormones. Dr. Henry Stanley Raper, professor of physiology in the University of Manchester and director of the Physiological Laboratories, has to his credit a quarter of a century's successful labour in the laboratory and as teacher at universities in this country and in Canada. Other new Fellows who have contributed to the advance of medicine are Dr. James Gray, a Fellow of King's College, Cambridge, and lecturer in comparative anatomy in that University; Prof. Harold Roper Robinson, professor of physics in the University of Wales; Mr. Charles Drummond Ellis, University lecturer in physics at the University of Cambridge; Prof. A. J. Allmand, professor of physical and inorganic chemistry at King's College, London; and Prof. A. H. R. Buller, professor of botany in the University of Manitoba.

REFLEX MUSCLE ATROPHY.

THE cause of the muscular wasting associated with arthritis has been much discussed, but the various theories propounded to explain it cannot be said to have a firm basis in physiology or pathology. We publish in this issue the report of an investigation by Dr. Beryl Harding which seems to be a substantial contribution to the solution of the problem. In a previous communication she described an important difference between the metabolic activity of muscles which had wasted as a result of arthritis and that of those in which the wasting was secondary to disuse. The former were found to show a great increase in oxygen consumption, which was almost double that of the latter and of normal muscles. This led to the hypothesis that the affected muscles might be in a state of reflex stimulation produced by impulses arising in the painful joints, and Dr. Harding's latest investigation has confirmed this explanation. Her physiological research throws light upon certain clinical facts concerning this type of muscular wasting. For example, it is a familiar observation that the tendon reflexes are increased in muscles whose wasting is attributable to arthritis; and this is a clinical indication of reflex hypertonia. R. K. Lippmann and S. Selig,[1] whose experimental study of muscle atrophy Dr. Harding quotes in her paper, object to her explanation of the increased oxygen consumption of the wasted muscles, on the ground that such heightened metabolism may occur in any spastic muscle, regardless of its diminution in size. But it is a well-known physiological fact that the metabolism of the spastic muscles of decerebrate rigidity is greatly below that of normal muscles. Clearly the reflex activity of the wasted muscles in arthritis is extremely expensive of energy and is physiologically different from the reflex postural hypertonia which results when certain levels of the nervous system escape from higher control. Clinical observation suggests that reflex muscle wasting is a concomitant also of lesions other than arthritis. It is to be found, for example, in association with metastatic neoplasms of

[1] Surg., Gynecol., and Obst., 1928, xlvii., 512.

bone. The most familiar manifestation of such wasting, however, is as the product of chronic pulmonary disease, especially tuberculosis. Unilateral wasting of the pectorals, trapezius, supraspinatus, rhomboids, levator anguli scapulæ, and even of the tongue is almost constantly to be found in the presence of tuberculosis of the upper lobe. This wasting, like that due to arthritis, is associated, at least in the early stages, with heightened reflex activity, manifested as myotatic irritability. It is therefore probable that arthritic muscular atrophy is a special instance of a general tendency to the occurrence of heightened reflex muscular activity in the neighbourhood of a visceral lesion. Such a reflex may well be protective in purpose, if we may speak teleologically, but its production by pulmonary disease which is often painless indicates that it is not exclusively associated with lesions causing pain.

PARASITE v. HOST.

IN the interplay between an animal or plant and its parasites there is always a tendency for selection to produce a race of hosts which can more or less successfully resist the parasite and a race of parasites which can effectively evade the host's defence. As the host population becomes more immune so the parasite population is apt to become more virulent. A particularly clear example of this adaptation in a parasite has lately been published [1] by Mr. W. A. R. Dillon Weston from the School of Agriculture at Cambridge. The Sherman variety of wheat is highly resistant to the fungus (*Tilletia caries*) known as "bunt"; thoroughly contaminated with bunt from Little Joss wheat, which is susceptible, it produces a crop with 1 or 2 per cent. of diseased ears. If this Sherman bunt is used to contaminate Sherman seed in the next crop the rate of infection rises to 86 per cent. Another resistant variety, Berkeley Rock, was contaminated in 1927 with Little Joss bunt and produced 1·6 per cent. of bunted ears; in 1928 contaminated with its own bunt this was increased to 91·1 per cent. The discovery or production of immune varieties has protected many crop plants from destructive diseases, but the parasites are evidently trying all the while to circumvent the plant breeder. The villainous mycologist evidently has a weapon more effective than tares.

LEUCOCYTIC CHANGES DURING LIVER THERAPY.

THE effects of the Minot-Murphy method of treating pernicious anæmia on the red blood cells, the hæmoglobin-index, and the blood nitrogen have been studied by various observers, but with the exception of L. E. H. Whitby,[2] no one seems to have made a particular study of the changes in the white blood corpuscles. Dr. G. Giauni, of the University of Genoa, has lately published some observations [3] which fill this gap in our knowledge. He found that the leucopenia invariably present in pernicious anæmia could be divided into three groups: (*a*) Cases with intense medullary reaction, representing about 30 per cent. They are characterised by a marked leucocytosis produced by the liver treatment and pari passu with this increase in the white cells there is an increase in the red cells. Poulton and Langmead have described a colour-index above normal. (*b*) Cases with adequate medullary reaction, comprising about 55 per cent. in which the number of leucocytes return to the normal amount; in some cases the number of the cells may be slightly below normal, in others slightly surpassed, but not to the same extent as in the first group. (*c*) Unfavourable cases with slight or absent medullary reaction. In about 15 per cent. of the cases there is little or no response to a prolonged ingestion of liver, the red cell increase is very small, and pari passu the number of white cells undergoes a very slight increase; the leucopenia remains and is of unfavourable prognosis. As regards qualitative changes, the hepatic treatment influences the behaviour of the neutrophiles. In the majority of cases (75 per cent.) the polymorphs increase in number without going beyond the normal. The increase in granulocytes corresponds to the total increase in leucocytes. In rare cases after treatment no variations are observed; the total mass of leucocytes increases very little and usually only reaches a figure below normal. There are still rarer cases where the number of neutrophiles is at the end of treatment below what it was at the beginning. As regards eosinophilia, which has been noted by Whitby, Dr. Giauni met with only one instance of slight increase (3 per cent.) in all his cases. The increase in polynuclears, whether they be neutrophiles, basophiles, or eosinophiles, seems to indicate that the erythropoietic activity of the bone-marrow is at the time actually increased, even though there are marked qualitative changes in the leucocytic formula. There was no change of any importance noticed in the basophiles nor in the monocytes. In pernicious anæmia there is a relative lymphocytosis, and this is only natural since, according to Ceconi, the lymphatic tissue continues to function normally, and given this relative lymphocytosis it is natural that with the increase of granular neutrophiles the number of lymphocytes should diminish. Generally the reduction in the number of lymphocytes is directly proportional to the increase in neutrophiles; the more the former increase the more the latter diminish. Assuming, in the absence of evidence to the contrary, that in pernicious anæmia the lymphatic system functions normally, it may be concluded that the behaviour of the lymphocytes is directly dependent upon the behaviour of the polymorphs, whether they be neutrophiles or eosinophiles, and that these reflect the greater or lesser activity of the bone-marrow.

[1] Nature, Feb. 16th, 1929, p. 243.
[2] THE LANCET, 1928, i., 285.
[3] Policlinico, Practical Section, 1928, xxxv., 2083.

A PIONEER IN SEXUAL PSYCHOLOGY.

IT is a truism that the moral and intellectual outlook of mankind varies with time and place, but only occasionally does some event draw our attention to changes that, without notable landmark, have occurred within our own days. Such an event is the publication of a biography of Havelock Ellis, by Houston Peterson.[1] The young Havelock Ellis is pictured as a studious, introverted, and conscientious youth, whose inner difficulties were greater than those of a similarly constituted youth of to-day, for the mystery of sex was then so well guarded that, as the biographer points out, Huxley's "Textbook of Physiology" went through many editions without a chapter on reproduction. These difficulties prompted in him the resolve to explore the dangerous ocean of sex in order to save other young people from the perplexities that tormented him, a resolve which led to wider efforts and the collection of a vast amount of information upon sex life, normal and abnormal. The middle-aged amongst us may remember that 30 years ago the first of his Studies in the Psychology of Sex became the subject of criminal proceedings, and was roundly condemned as lewd and obscene. In recent years frequent public references to Havelock Ellis and his work give no hint of this stormy reception, though the series has never been published in England, and the last volume, entitled Eonism and other Studies, which was published in America last year, contains in its preface a suggestion that certain material has been omitted on account of English prejudices. In the intervening years a change of attitude has certainly taken place; venereal disease and birth control may now be publicly discussed; many young people of to-day accept as ordinary knowledge information upon sex topics that in the last century would have been forbidden to them.

[1] Havelock Ellis. London: George Allen and Unwin. Pp. 432, 18s.

and would smile in wondering derision if told of the elaborate precautions that were taken, only a generation ago, to separate the sexes when bathing. In the scientific world, though there is not yet full recognition that science must know no prejudices, yet we no longer make the pretence that difficulties and abnormalities of the sexual life can be made non-existent by ignoring them. Hence the work of Havelock Ellis can now be viewed more dispassionately, and no one can read this biography without recognising that he was far from the monster of iniquity he was once considered to be. Few of us, it may be admitted, can free ourselves as he did from the last trace of emotional reaction against subjects that the most enlightened have at some time or other regarded as repulsive, and yet only such freedom enabled him to obtain the material he has given to the scientific world, for the emotional reaction often appears as moral judgment and effectively prevents a sufferer from voicing his difficulties or even revealing their existence. The value of his clinical material may diminish as the growth of knowledge makes it commonplace, but the change in the spirit of medical science towards the problems he made his own may perhaps be the most enduring result of his labours.

THE SALVAGE OF SLAUGHTER-HOUSE AND MARKET REFUSE.

THE care and thought a city corporation to-day devotes to the utilisation of waste is well brought out in a paper on the Treatment of Organic Waste, by Mr. W. Weaver, chief chemist to the Birmingham Corporation Salvage Department, which appears in the *Journal of the Royal Sanitary Institute* for February. His plant handles, he tells us, 4000 tons of refuse in the year, in the midst of a densely populated area, without smell or nuisance, and turns out 1000 tons of feeding meals and fertilisers, and nearly 100 tons of fat. The refuse is animal or vegetable. Animal refuse is tipped out in a room with thorough exhaust ventilation into the hot flues of the destructor, and the floor is washed down and disinfected daily. Meat goes into one of the "melters," steam-jacketed at 40 lb. pressure. As the temperature of the new charge rises, steam comes off and is removed by a vacuum pump, and at last the protein material is dry and swimming in melted fat. This free fat is run off; what is left is put into heated centrifugal extractors, where any remaining fat is squeezed out, and the residue is ground into feeding meal. The total fat is collected, washed, dried, and sold for making soap or candles, its price being all the higher because it is prepared at a relatively low temperature under this vacuum treatment. Other protein "meal" is got from "slime" and "offal." Slime used to be known as gut-scrapings. It contains 90 per cent. of water, so it will not pay for drying, but the albumin is coagulated by boiling, and is then collected, dried, and ground up. The offal—stomachs of slaughtered animals, their intestines, and the contents—is in part made into fertiliser; the rest is minced, washed clean of the "contents," freed from fat, if any, and ground into a feeding meal. Bones from dustbins have a fatty film over them that attracts dirt, so they must first be washed in water at 50° C., then they are heated rapidly to get quick protein coagulation, the fat is extracted, and the remainder is ground to bone meal, a valuable fertiliser. Fish residues can be made into a good feeding meal once the valuable fish oil, which spoils the meal, has been removed. The oil from herrings or mackerel is useful in currying leather, in making linoleum, and for other purposes. All these processes are carried out separately, different melters being employed for feeding meals, for meat, for fish, and so on. In dealing with vegetable refuse, the great source of difficulty is water, generally 90 per cent. by weight. Gross forms of contamination such as metal, wood, stones, and glass, are mechanically removed, and the vegetable matter is then passed through rollers which squeeze out the water, the resultant ribbon being dried by the flue gases. So much of it is indigestible—a great deal is cork dust and grape packing—that it can only be made into fertiliser; yet it has value, taking the place of stable manure, which is now not so easily obtainable as it was.

PUBLIC HEALTH NURSES IN SCOTLAND.

A SCOTTISH education authority is inviting applications from trained nurses for appointment as nurses in the county schools. Over and above general training in nursing the qualification of the applicants is to include experience in diseases of the ear, nose and throat, eye and skin, and some training in children's diseases, as well as in a fever hospital, and preference will be given to those with school or public health experience. A salary of £120 is offered, rising by increments of £10 to £210 per annum, with an allowance of £13 for subsistence and £10 for uniform. It is instructive to note how these requirements cut across the present-day equipment of the average nurse. When the General Nursing Council was established it was realised how imperfect was the so-called general training of nurses for public health work. Nurses with four years' hospital training may have a high standard of medical and surgical experience, and yet be unqualified to deal with much that lies outside hospital practice. The general hospital trainee usually is unfamiliar with fevers, and yet fevers are certain to be among the work that falls to the school or district nurse. It is unfortunate that, owing to the splitting up of the Register, the nurse who has trained in the wide range of work required by the health authorities has been relegated to a subordinate section of the Register. While no doubt this will rectify itself in course of time, there is little doubt that as public health work develops under the new system of local government the nurse with "general training" only will not be in the running with the nurse who is trained in the institutions of the local authorities themselves. When the work of the poor-law and of the education authority is transferred to the new health authority, it will be open to the larger municipalities to train nurses in their own institutions, providing them with facilities for practice in all branches of public health and school work. It may then be regretted that the classification for registration purposes was not conceived on a broader basis, for in Scotland at least registration has suffered because public health nurses have not found it of much value. The advertisement to which we have referred is a good illustration of the reasons why. With the resources of the poor-law hospitals, the fever hospitals, the maternity hospitals, and the child welfare centres, as well as the school clinics, the new authorities will be in an exceptional position to provide a worthy training curriculum. In the Aberdeen scheme the nurses will have the advantage of training in more than one institution under the same authority. When the new system becomes general the same will be true all over Scotland.

STERILISATION OF THE FEEBLE-MINDED.

ALTHOUGH our institutions are crowded with the feeble-minded, and even the system of boarding suitable cases with families is reaching its limits, public opinion in this country has so far refused to give serious consideration to the rights and wrongs of sterilisation. Possibly the memoranda lately issued by the Eugenics Society and other bodies will awaken interest in the subject, and this is a fitting time to point out that there is no foundation for the widespread belief that sterilisation means unsexing—a belief on which a good deal of ill-informed opposition is founded. It is now 20 years since public opinion in California was convinced of the desirability of sterilising mental or defective patients who are still able to support themselves or whose families are able to care for them, and since that time 5820 Californian

citizens have been sterilised. Of the 3232 men so treated 2705 were insane, and 527 feeble-minded; of the 2588 women 1792 were insane and 527 feeble-minded. The procedure in use is described by Dr. R. L. Dickinson in the *Journal of the American Medical Association* of Feb. 2nd. After a patient has been studied in the State Hospital, his case is taken up by a full staff at a regular weekly or bi-weekly meeting, when the family record, the judge's report with its opinion from two physicians, and the new hospital history, are read in detail by the physician in charge, together with the results of the physical, mental, and laboratory examination. The patient then appears and is questioned by several of the six to ten persons present. Should the opinion be reached that he is a suitable subject for sterilisation, this is carried out by the surgeon in charge. In men vasectomy is performed, an inch of the vas deferens being removed on either side through a small incision in the upper portion of the scrotum. The operation is a simple one and can easily be done under a local anæsthetic, but owing to the disturbed mental state of the patient general anæsthesia is usually employed. In women a small abdominal incision is made and a portion of the Fallopian tubes, about an inch long, is resected, the divided ends being buried in the peritoneum. Dr. Dickinson suggests that since an opening into the peritoneal cavity, however carefully performed, cannot be made without some risk, sterilisation in the female might be carried out through the vagina; but vaginal cœliotomy is an uncommon operation in America, and this method of approach has not been adopted. At the end of his article he discusses other possible methods of sterilisation—in males by irradiation of the testes or even by application of heat, and in females by irradiation of the ovaries, and by closure of the openings of the tubes into the uterine cavity. With one of the new hysteroscopes an operator may locate the opening of the tubes and, using an electric cautery or diathermy electrode, he can obliterate it, the success or otherwise of this procedure being afterwards ascertained by insufflation. This method has only reached the experimental stage and further observations will be needed before it can be considered satisfactory. Dr. Dickinson's paper is of interest not only because it publishes records of the largest series of sterilising operations that have ever been done, but because it shows that the Californians have found no difficulty in putting into practice their political opinion about procreation by the mentally afflicted.

A FORM OF SPLENOMEGALY HITHERTO UNDESCRIBED.

THE spleen has come in for a good deal of attention in the course of the last few years and much has been learned about its physiology and pathology. Several more or less successful attempts have been made to classify the various forms of splenomegaly and most of these can now be correlated with disturbances either of the circulatory mechanism or of the reticulo-endothelial apparatus of the organ. The forms of splenomegaly associated with disorders of the reticulo-endothelial apparatus constitute a very interesting group, including the splenomegaly of Gaucher's disease, splenomegaly of the Niemann type, and the splenomegaly coincident with various kinds of lipæmia and cholesterolæmia, of which one variety, associated with diabetes, was described by Schultze some years ago and a second, associated with chronic cholæmia, more recently by S. C. Dyke. It almost seemed that the splenomegalies had been definitely classified and that all that remained was to fill in details, but recent observations by Fiessinger, Gregoire, and Olivier,[1] of Paris, indicate that there is yet one more form to be accounted for. The source of the spleen in question was a female patient who from 1916 to 1926 suffered from increasing anæmia with progressive though slow splenomegaly. In 1926 when the spleen was removed the blood showed 30 per cent. of hæmoglobin with 1,500,000 red cells; white cells were 4000 per c.mm., the only peculiarity of the differential count being the presence of 2 per cent. of Turck's cells. Before removal the spleen reached 10 cm. below the costal margin and its weight after removal was 580 g. Operation was followed by speedy disappearance of the anæmia and a rise in white count to nearly 8000. Macroscopically the spleen showed fibrosis with no observable abnormalities. Microscopically it was characterised by the presence of enormous numbers of giant cells, some comparable in size with those usually found in tuberculous infection, others many times larger. Caseation was absent; no "epithelioid" cells were to be seen, examination for the presence of tubercle bacilli was negative, and portions of the fresh organ introduced into guinea-pigs failed to produce any infection. Many of the giant cells showed cavities in the cytoplasm containing amorphous refractive material whose nature remains obscure. The authors hazard no suggestion about the nature of this form of splenomegaly and merely state that the report has been published at the request of several hæmatologists. It is fairly clear that it belongs to the class associated with disorders of the reticulo-endothelial apparatus, but that is as far as present knowledge goes. It is interesting to note that this type of splenomegaly, though hitherto undescribed, has not gone unrecognised in this country. Sections of a spleen presenting appearances in every way comparable with those described by the French authors were passed from hand to hand at the meeting of the Pathological Society of Great Britain and Ireland in January, 1927, and aroused a good deal of interest. Details of the case were lacking, but it was stated that the spleen had been removed with good results from a woman suffering from anæmia.

[1] Une splenomégalie plasmodiale, N. Fiessinger, R. Grégoire, and H. R. Olivier, Le Sang, 1928, ii., 37.

THE PLAGUE MENACE IN SOUTH AFRICA.

Cape Town, in addition to having to cope with all the health problems of a British seaport, including a shortage of houses, is faced with a special danger owing to the infection of the veld rodents with plague. In his latest report on the health of that city Dr. T. Shadick Higgins remarks that in the last five years there has been a recrudescence of human plague in South Africa. In the year 1923–24 there were 372 cases in the Union, chiefly in the Orange Free State, but a few in the Transvaal, and 31 in the northern districts of the Cape Province. In 1924–25 there were 112, and in 1925–26 there were 71 human cases, with 26 in the Cape Province. In 1926–27 there were 75 cases in the Union, of which 46 were in the Cape Province. As yet there have been no human cases in Cape Town itself and, apparently, no plague infection among the rodents there. In 1923–24 the area of plague infection was still at a great distance. In 1924-25 there were human cases at De Aar, 500 miles from Cape Town; and in 1926–27 there were cases within 200 miles of Cape Town, with extensive infection of wild rodents. In January, 1928, the wild rodents, in an area about 80 miles from Cape Town and separated only by a narrow tract of country from the Cape Flats, were found to be heavily infected. Cape Town is situated in a district infested with gerbilles, which flourish in the sandy flats and are attracted to villages and farms in search of grain. A large anti-rodent staff is employed to keep them down, and the number of rats in the town and gerbilles in the surrounding country is actually far less than it was a few years ago. The staff is being increased and special attention is being given to the rat-proofing of all premises. It is generally supposed that the African breeding-ground of plague is to be found near the source of the White Nile, and that the disease is spread thence by traffic to Egypt or in other directions. The health report for Durban for 1926–27 shows that there is, at the moment, no risk there of direct

spread by veld rodents, but that special precautions are taken to reduce the possibilities of rat transference from up-country centres by rail as well as for the destruction and what is called the building-out of the rat. There, also, the staff engaged in this work has been increased. Earlier in this century California suffered from outbreaks of human plague, and there both the rats and the ground squirrels were found to be infected. In 1913–14 a million rats were destroyed in San Francisco and some 20 million ground squirrels in the neighbourhood. The rat is, of course, the most dangerous animal to man, because it comes in closer contact with him. It may be that the rat-flea is a more effective vector than the insect parasites of the gerbille or ground squirrel, although, speaking generally, all species of fleas found on rodents are capable of transmitting plague. It would appear, however, that up to now the human cases in the Union of South Africa have been chiefly contracted in the rural districts from the gerbille, and that the infection has not yet extended to the town rats.

THE progress of His Majesty the King continues to be satisfactory. The fact that the week has gone by without the issue of an official bulletin may be allowed to speak for itself.

The Services.

THE HEALTH OF THE ARMY.

THE annual report on the health of the Army for 1927,[1] which has just appeared, is less severely statistical than formerly—more ready to tell of changes in the health of the troops, and how treatment has improved. There were in 1927, 187,084 men in the Army, and, per 1000, there were 467·7 (454·8) admissions, 2·42 (2·35) deaths, and 11·4 (10·7) finally discharged invalids. The figures in parentheses are those for 1926. The chief causes of illness for officers and men are given as malaria, tonsillitis, pharyngitis, and bronchitis. Officers suffer more than "other ranks" from injuries and appendicitis. The chief cause of loss of service was venereal disease.

The principal causes of deaths among "other ranks" were injuries, 131; pneumonia, 73; suicide, 38; and tubercle of lung, 27; whilst the principal causes of invaliding were diseases of the ear and nose, 514; of the nervous system, 225; and tubercle (all forms), 203. Admissions for dengue numbered 982 (1644 in 1926), a fact which gains importance because the insect vector of yellow fever and dengue is the same. Diphtheria proved troublesome in 1927, and the report states that active immunisation was to be used in 1928. Most cases of dysentery were bacillary; for the amœbic variety emetine is still regarded as the best remedy. The incidence of enteric fever increased from 0·9 to 1·3 per 1000, 30 cases occurring at Shanghai; the unprotected had an attack-rate of 4·7, three times that of the inoculated, 1·6. Over 95 per cent. of the whole Army is now protected. Malaria is being reduced in India by keeping the troops in non-malarious hill stations, and by mosquito-proofing of barracks. Admissions in India this year numbered 7723, a reduction of 1500. The disease was said not to occur at Shanghai, but it nevertheless attacked the troops. Although the local carrier, *Anopheles hyrcanus*, does not enter the brightly lighted houses of residents, as many as 50 of these insects might often be found in each of the tents of the soldiers.

The number of cases of pneumonia reported was 672 (502), the especially fatal lobular form being particularly noted at Shanghai. "Pyrexia of uncertain origin" appears less often in the returns in proportion as tropical diseases are better understood, and an unknown, undifferentiated fever is hinted at in Egypt, and another in Jamaica. Tuberculosis of lung was this year equally prevalent (1·3 per 1000) among officers and men, slightly more than in 1926, when its incidence was the lowest ever recorded. Venereal disease, with a case incidence of 49·1 per 1000, increased by a fifth, the rates being 21·4 at home and 223·5 at Shanghai. For every 100 cases of venereal disease at home, the infections were gonorrhœa in 76, soft chancre in 5, and syphilis in 18. In India the corresponding proportions were 71, 19, and 10; and in Shanghai, 53, 40, and 7. Much is said about vaccine treatment of gonorrhœa, but the average duration of a case does not seem to shorten.

It is repeated, with examples, that no one who has had encephalitis lethargica will make an efficient soldier, being too untrustworthy; special efforts are being made to prevent the entry of men with middle-ear disease. Gastric and duodenal ulcers were as frequent as in 1926, but operations were more successful. A dozen interesting pages are devoted to the medical history of the Shanghai Defence Force (p. 120 seq.).

Operating theatres are being steadily improved; a portable X ray apparatus has been standardised, and there are ultra-violet lamps in all the larger hospitals. It is being discussed whether canteens should not be shut for two hours before dinner so that the young soldier may get more good out of the excellent food provided for him. On transports milk is made from butter, milk powder, and water. Stainless steel seems to be useful for water-bottles and salt-cellars. Increased quantities of vaccines and sera are prepared, and there is an interesting note on the study of vaccinia at Woolwich. Dental work goes on briskly, and the example of the old soldier now reinforces the dentist's advice, whilst it is noted that after dental treatment recruits show increased self-respect and smartness. Medical units of the Shanghai Defence Force were the first to go abroad with complete dental personnel and equipment, and much good work was done in the transports during the outward voyage.

In spite of occasional disappointments, the good work done for many years by the officers of the Royal Army Medical Corps is bearing fruit, which will be a source of satisfaction to Sir Matthew Fell, the Director-General, who signs the report.

[1] London: H.M. Stationery Office. 1929. Pp. 144. 4*s*. 6*d*.

ROYAL NAVAL MEDICAL SERVICE.

R. C. Webster to be Surg. Lt.

The following appointments have been made:—

Surg. Lt.-Comdr. H. L. Douglas to *Assistance*.

Surg. Lts. H. S. Marks to *Clematis*, and J. J. Cusack to *Bridgewater*.

ROYAL ARMY MEDICAL CORPS.

Capt. V. J. Bonavia to be Maj.

Lt. (on prob.) W. A. R. Ross from the seed. list is restd. to the estabt.

The undermentioned to be Lts. on prob.: W. F. L. Hannay (seconded), W. H. Scriven, from R.A.M.C., Reg. Army Res. of Off., H. G. G. Robertson, H. C. Benson (seconded), E. M. Hennessy (seconded), M. J. Malley, H. E. Knott (seconded), J. Crealey, V. C. Verbi, R. R. Leaning (seconded), and G. F. Harrison (seconded).

ARMY RESERVE OF OFFICERS.

Lt.-Col. H. H. Leeson to be Lt.-Col.

TERRITORIAL ARMY.

Lt.-Col. L. A. Harwood, T.D., to be Bt. Col.

Lt. E. W. Ashworth to be Capt.

R. F. Ward, A. J. King, and J. C. Fotheringham to be Lts.

TERRITORIAL ARMY RESERVE OF OFFICERS.

Maj. M. Coplans, having attained the age limit, relinquishes his commn. and retains his rank.

Majs. O. Teichman and I. H. Lloyd-Williams, from Active List, to be Majs.

NATIONAL INSTITUTE OF INDUSTRIAL PSYCHOLOGY. The trustees of the late Mr. C. Heath Clark have allocated £10,000 to this institute for the promotion of education in London.

The Clinical Interpretation of Aids to Diagnosis.

A Series of Special Articles contributed by Invitation.

XXIV.—THE ELECTROCARDIOGRAM.

PART II.*—ABNORMAL RECORDS.

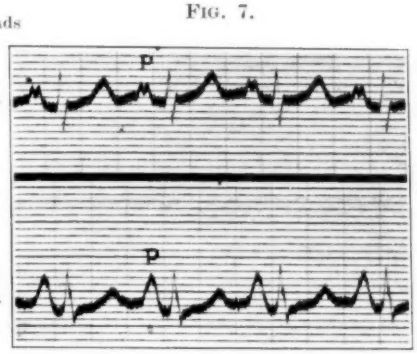
When *hypertrophy* affects the two ventricles unequally, so that the normal balance between them is upset, a characteristic alteration appears in the direction of the initial ventricular deflexions. When the right ventricle predominates (Fig. 6A) the upward deflexion R is larger in lead III. than in lead I. Conversely, when preponderance is in favour of the left ventricle (Fig. 6B) R in lead I. (R_1) and S in lead III. (S_3) are the prominent features. It is only when the heart is enlarged that a diagnosis of right or left preponderance should be made; for in hearts of normal size similar variations in the QRS complex may be due to the lie of the heart in the thorax, the transversely disposed heart of the short thick-set individual giving a record resembling that of left preponderance, while the vertical heart of the long narrow-chested subject tends to give one like that of right preponderance.

Students often ask what help the electrocardiogram can give in the diagnosis of *valvular lesions*. The answer to that question is that the form of the record may be modified indirectly when the valvular lesion is associated with auricular hypertrophy (Fig. 7) or with an alteration in the relative muscle masses of the two ventricles. Old-standing cases of aortic incompetence, for example, often show left preponderance, while right preponderance may be present in mitral or pulmonary stenosis.

Ectopic Beats.—Variations in the amplitude and duration of the initial ventricular deflexions (QRS) are striking features in certain abnormal records. If experimentally one produces a forced beat by stimulating the apex of the right or left ventricle, the wave of excitation has to spread either through the septum or up one branch of the A-V bundle and down the other (Fig. 2) to reach the opposite ventricle. It takes longer to cover the ground. Consequently the duration of the QRS group is prolonged; and, since the stimulated ventricle starts to contract before the counterbalancing electrical disturbance arises in its fellow, the initial ventricular deflexions are of unusually large amplitude.

A spontaneous *ventricular extrasystole* in the human subject is analogous to an experimentally forced beat, and the electrocardiogram (Fig. 8) consequently exhibits similar features.

FIG. 7.

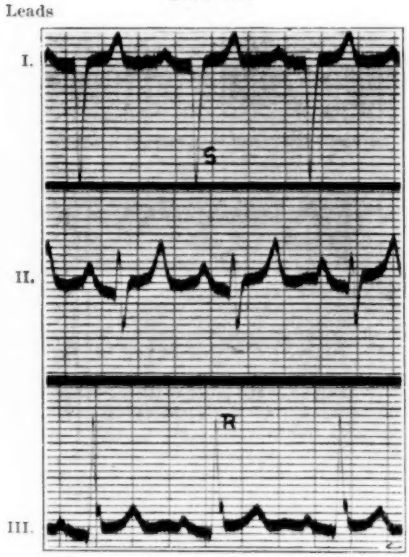


Auricular hypertrophy. The P wave is notched in lead I. and of unusually large amplitude in lead II.

Another cause of asynchronous contraction of the ventricles is a *lesion in one or other branch of the A-V bundle.* Every cycle in the record (Fig. 9) from such a case resembles a ventricular extrasystole in the increased duration of the QRS group and in the peculiar form of the T wave. When, on the other hand, an extrasystole occurs in response to an impulse arising in the auricle or A-V node, the stimulus reaches the ventricles by the normal pathway, and consequently only the auricular complex (P) is modified. A series of such premature beats constitutes what is called a paroxysm of tachycardia (Fig. 13). In health the rapid ventricular deflexions are sharp and clean. R and S waves which are notched or slurred in either lead I. or II. are abnormal.

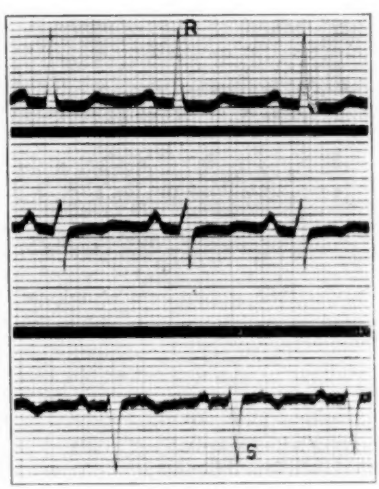
Heart-block becomes a fascinating subject when studied electrocardiographically. In its mildest form it cannot be recognised without the aid of graphic records, for the rhythm of the heart is undisturbed, though the normal pause between the commencement of the auricular and ventricular contractions is prolonged. This is depicted graphically by lengthening of the "P–R interval," which in health (except in athletes) never exceeds 0·2 sec. Heart-block of a more severe grade is characterised clinically by the occurrence of intermissions in the pulse. The mechanism of this disturbance is very beautifully shown in the electrocardiogram. In the third cycle of Fig. 10 the P–R interval is less than $\frac{1}{4}$ sec. In the fourth it is almost 3/10 sec., while the fifth impulse (P_5) is completely held up and fails to reach the ventricle. This sequence of events is precisely repeated in the next three cycles. A record such as this gives one a remarkably vivid picture of what is taking place. The

FIG. 6A.



Right-sided.

FIG. 6B.



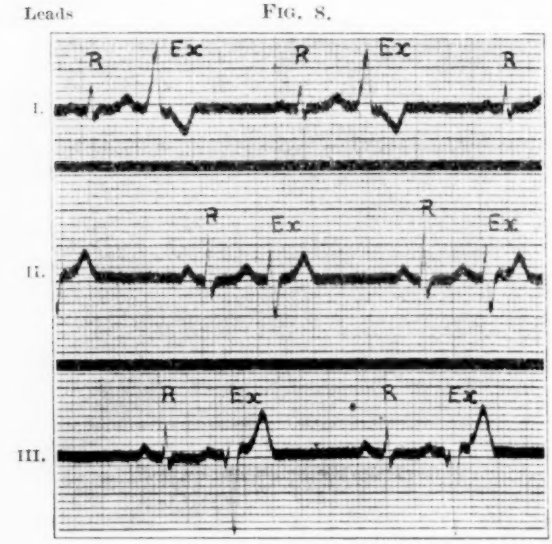
Left-sided.

Ventricular preponderance. (3 m.v. = 3 cm.).

* Part I., Normal Records, appeared last week.

series of auricular impulses is like a convoy of wagons crossing a muddy swamp; each wagon makes the ruts deeper, the going becomes heavier and heavier, till eventually the road is no longer passable, and the next wagon has to wait until temporary repairs have been carried out.

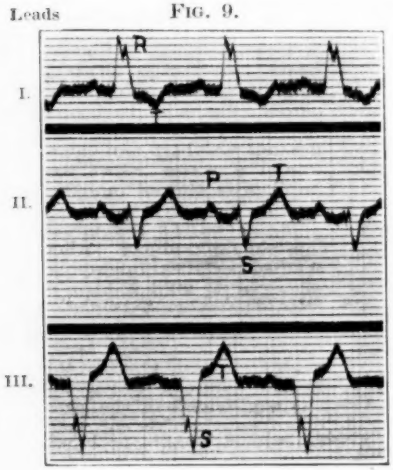
FIG. 8.



Ventricular extrasystoles (Ex.) follow each normal beat (R). (3 m.v. = 2 cm.)

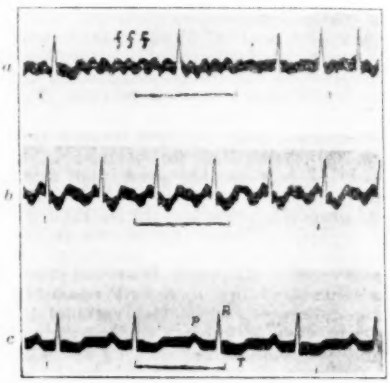
Auricular Fibrillation.—Electrocardiographic control of the treatment of auricular fibrillation with quinidine affords another glimpse behind the scenes. Hour by hour, as the heart comes more and more under the influence of the drug, we can watch the gradual increase in duration and regularity of the auricular wavelets (fff, Fig. 11, *a*) marking the transition from fibrillation to flutter (Fig. 11, *b*), and enabling us to trace the relationship of two conditions which clinically appear so widely different. The enemy is gradually withdrawing from his outer defences as the bombardment grows hotter. Then suddenly a shell bursts in the very midst of his magazine. The day is won. Normal rhythm has been restored (Fig. 11, *c*).

FIG. 9.



Bundle branch block.

FIG. 11.

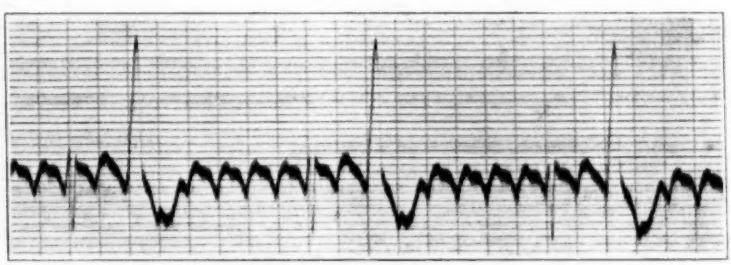


Three records from a case of auricular fibrillation treated with quinidine: (*a*) fibrillation; (*b*) flutter; (*c*) normal rhythm. Black line under each record = time interval of 1 sec.

Conclusion.

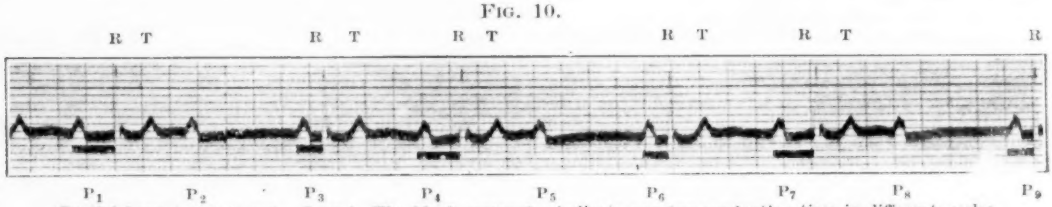
Heart-block and fibrillation are but two examples of the romance of electrocardiography; there are many others. A single case may serve to illustrate the clinical importance of this investigation in diagnosis and prognosis. A stout and pampered invalid of 66 had suffered for 15 years from pain in the chest, in addition to various other ailments. There was nothing abnormal to be found on physical examination of the cardiovascular system. The highly strung nervous temperament of the patient, and the fact that the pain frequently came on when lying down, and could be relieved by standing up and walking about, had led her doctor to discount the subjective symptoms, and to label the case "pseudo-angina." An electrocardiogram, however, revealed bundle branch block, a finding which completely reversed the prognosis, and the patient died suddenly a month later.

FIG. 12.



Record from a case of auricular flutter with complete heart-block and bigeminal action. S = Normal beat. Ex. = Extrasystole.

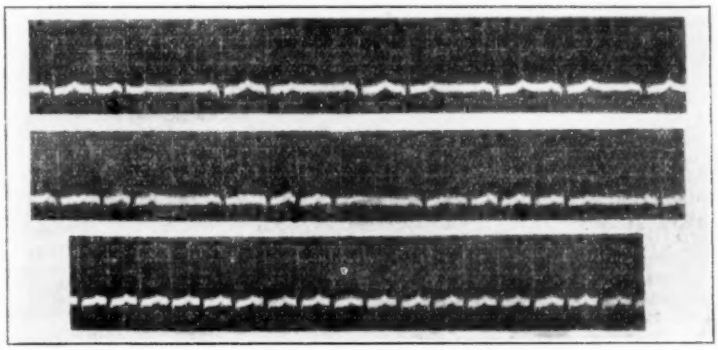
FIG. 10.



Partial heart-block (3 mv. = 2 cm.) The black rectangles indicate varying conduction time in different cycles.

No one is likely to question the importance of the advances in our knowledge of the disorders of the cardiac mechanism which we owe to the electrocardiograph; but, since it is the function of the practitioner to combat disease, he will naturally ask, "How can this instrument help us in the diagnosis and treatment of our patients?" The answer to that question is that the electrocardiograph can often furnish definite objective evidence regarding the condition of the all-important heart muscle; and what is more, it can sometimes do so when other methods of examination are almost, if not completely, impotent. It is not only in the more complicated disorders of the cardiac mechanism, such as that illustrated in Fig. 12, but also in cases where the history is inconclusive and the physical examination yields little help, that the additional evidence furnished by the electrocardiogram may be of so much value. A normal electrocardiogram, on the other hand, does not necessarily signify a normal heart. As in the case of the Wassermann reaction, it is only a positive finding to which one can attach much weight. In conclusion one must emphasise the importance of remembering that electrocardiography like all laboratory methods of diagnosis is merely supplementary to the clinical investigation, and that the results obtained must always be considered in conjunction with the clinical evidence. In diagnosis electrocardiography, like radiography, may hold the casting vote; but the ordinary clinical methods are necessary to form a quorum.

FIG. 13.



These three records were taken from the same patient at the same sitting. The upper record shows single extra-systoles (1), the middle record groups of two (2), three (3), and four (4) extra-systoles, and the lower record a paroxysm of tachycardia, in which the ventricular complexes are similar in form to those of the extra-systoles in the upper two records.

CRIGHTON BRAMWELL, M.A. Camb., M.D. Manch., M.R.C.P. Lond.,
Assistant Physician to the Manchester Royal Infirmary.

Special Articles.

PROBLEMS OF MATERNITY AND CHILD WELFARE.

GROUP MEETING OF THE SOCIETY OF MEDICAL OFFICERS OF HEALTH.

MANCHESTER, FEB. 21ST TO 23RD, 1929.

AT a meeting of the Maternity and Child Welfare Group, held at Manchester and presided over by Prof. LOUISE MCILROY, the first session was given up to a discussion on

Puerperal Fever.

Prof. W. FLETCHER SHAW, in the opening paper, dealt with autogenous and exogenous sources of infection. He believed, from his clinical experience, that autogenous infection was very rare, and that most cases of sepsis were exogenous, though some were not controllable by, or attributable to, the medical or nursing attendant. The husband was one factor, the patient's own dirty hands another, and the handywoman a third. It was dangerous to exaggerate the importance of autogenous infection because it might lead to less care. In teaching he would almost disregard autogenous infection and work for the prevention of exogenous infection by insisting on careful preparation of the hands of nurse and doctor. Attendance on midwifery cases in unsuitable homes was apt to induce a hopeless attitude toward asepsis. If the same attitude were adopted in surgery we should soon be back in pre-Listerism. Every case of puerperal infection was a reason for close self-examination by the attendant. He believed that the tar derivatives had done much harm—partly because they were used in dilutions which were quite ineffective. He would like to go back to perchloride and biniodide.

Turning to administrative measures, he laid that to ensure early recognition of disinfection by antenatal work was a difficult task even for a practised obstetrician, who was able to discover his errors in antenatal work by following up his cases; the young, inexperienced, whole-time practitioner who frequently conducted antenatal clinics was not able to follow his cases and learn from his errors. The Government had stepped in ineffectively. Diagnosis was comparatively easy, but there was no proper hospital accommodation available. He did not believe in cases of puerperal fever being treated in fever hospitals, where the medical staff might or might not be interested in obstetrics. For rural cases frequently the only provision was an isolated fever hospital. At present consultant obstetricians had no opportunities for clinical research in wards, but only on sporadic cases.

The need for better training of the practitioner was realised, but the public must also be educated. Antenatal clinics should be staffed by the obstetricians who were going to see the cases through; those who held the antenatal clinics must know the ultimate result of the labours. The young well-trained administrator might be better versed in modern midwifery than some of the general practitioners, but he should use his knowledge in a helpful rather than in a critical way. Treatment should be carried out by those who were clinically interested in this work, and antagonism between the administrator and the clinician must cease.

Prof. H. B. MAITLAND said the *Streptococcus hæmolyticus* was the chief bacterial offender; carriers of this organism were quite common. The same toxin was produced in scarlet fever, puerperal fever, and erysipelas; it might be logical to apply the Dick test and the use of scarlet fever antitoxin in pregnancy. Immunity to the toxin did not imply immunity to the streptococcus infection, but something useful might result from the establishment of toxin immunity in pregnancy, even if antibacterial immunity could not be obtained.

Dr. F. H. LACEY described methods of avoiding vaginal infection in the later months of pregnancy. He urged medical practitioners to employ midwives and not handy-women. Midwives should be subsidised,

and sterilised outfits should be provided. Both medical student and midwife needed to obtain experience in puerperal fever. Separate hospital wards should be provided for cases regarded as specially liable to sepsis before admission. Tactful administration was needed; early notification and early treatment had not been secured. During the previous three days he had seen in consultation three cases of puerperal sepsis which were notified only when moribund. One of the best hospitals he had seen was at Norton, Sheffield, not a fever hospital. Antenatal clinics should be conducted by expert obstetricians, preferably in connexion with maternity hospitals; fever hospitals should not be used for puerperal sepsis. From his experience he could say that the services of the consultants appointed in the Manchester neighbourhood were not utilised.

Dr. J. H. KERR stated that Monsall Hospital had a well-trained puerperal unit; he saw no reason why fever hospitals should not be used if they were provided with an efficient staff. Dick tests and subsequent immunisation during pregnancy should be tried; it might be advisable to have separate wards for Dick-positive cases. He described the advantages of Dr. Remington Hobbs's glycerine drainage treatment, and also its contra-indications. It was desirable that the coroner and medical officer of health in conference should have power to order a post-mortem examination in all deaths occurring within 28 days of childbirth. Clinical pathologists might be called in consultation before the gynæcologist, who would then have the pathological report before them.

In the general discussion which followed the limited use of the consultants provided was confirmed, also the want of coöperation between the administrators and the obstetricians. The investigation of puerperal deaths was discussed and complaints of overlapping of officials were ventilated. There appeared to be general agreement that investigations at the home should be carried out by a senior medical administrator. As regards antenatal clinics, it was claimed that they were only a stopgap till a better obstetrical service had been secured, and that some benefit was obtained even if the medical officer in charge was not always able to follow up his cases. It was pointed out that whole-time officials were often appointed because the general practitioners would not do this work.

The PRESIDENT claimed that the statistics needed to be put on a proper basis. She considered that teeth were quite important as an autogenous source of infection. She described the methods adopted at the Royal Free Hospital, where septic (except V.D.) cases were detained for treatment, but were kept in separate wards. Open-air treatment and colon lavage had been found beneficial. It was necessary to have postnatal as well as antenatal clinics. She strongly favoured the glycerine treatment in suitable cases. She believed resistance to infection was lowered by prolonged labours and advocated a greater use of sedatives and anæsthetics. The investigation of maternal deaths must be carried out tactfully and by a medical practitioner.

Other Topics.

Dr. C. P. LAPAGE dealt with endocrine deficiency in children and also brought up to date the information given by him in THE LANCET (1926, i., 176) with respect to pink disease. Since his first case in 1923 he had now seen about 70, only three of which had been diagnosed beforehand. At present this disease was not known to practitioners, but only to hospital residents. Any practitioner who had once seen a case would not miss another. Most of the children were under three and some were entirely breast-fed. There was seldom more than one case in a family; the infectivity appeared to be on a par with that of poliomyelitis. A few cases died from broncho-pneumonia but 90 per cent. recovered, though occasionally not for a year. The cause and pathology were still mysteries. Some of the names given to the disease were misleading, because polyneuritis and œdema were not constant symptoms. He suggested "acroerythema." As to treatment, as yet good nursing and keeping warm were the main things.

Dr. M. J. ROWLANDS dealt with the effects of vitamin B deficiency on the intestinal tract and illustrated his lecture with lantern slides of the dilatation of the stomach and the atrophy of the muscular and mucous coats of the stomach and intestine of rats kept on a B-deficient diet. Further slides showed the resulting intestinal stasis and the progress up the lacteals of specific bacteria fed to those rats in broth. Applying these results to human beings, Dr. Rowlands suggested that they afforded an adequate explanation of the bearing of intestinal toxæmias on rheumatoid arthritis and of the route by which the colon bacillus found its way to the bladder, via the lymphatic system, in that disease. A similar dilatation of the stomach in human beings as the result of vitamin B deficiency would obviously be an important matter in cardiac cases. He believed that modern diets were more likely to be deficient in B-vitamin than in any of the other vitamins.

SECOND SESSION.

At the second session, presided over by Dr. F. T. H. WOOD, the discussion turned on the

Diet of the Young Child.

Prof. STUART COWELL led off with an exposition of the views held by research workers as to the dietetic needs of the young from conception to adolescence. He gave as evidence that all was not well: the poor physique of many of our urban children, the liability of the young child to intestinal, respiratory, rheumatic, and tuberculous infections, to disorders of calcification, such as rickets and ill-formed teeth (with effects lasting through life), and to enlarged tonsils and adenoids. He showed the need for a diet for the child (supplied through the mother from conception to weaning) which contained sufficient vitamin D and calcium, sufficient vitamin A to promote resistance to infections, sufficient iron to guard against nutritional anæmia; in goitrous districts iodine should be given under medical direction. He went on to indicate from what foods these various requisites could be obtained. The main error in children's diets was the deficiency of the fat-soluble vitamins A and D. The distribution of these vitamins was similar except that the amount of vitamin D in green vegetables was negligible. For safety extra vitamins should be given to breast-fed as well as to bottle-fed infants in the forms of cod-liver oil (beginning with a quarter of a teaspoonful a day at 2 weeks old, increasing to one teaspoonful at 3 months and 3 teaspoonfuls at 9 months, to be continued throughout young childhood), egg-yolk in small quantities (for its iron content) from the third month, and orange-juice. Mrs. May Mellanby had shown that vitamin D was not only essential for building good teeth, but also had the power of preventing the extension of decay in children's teeth. The anti-calcifying elements in such cereal foods as wheat germ and oatmeal should be counteracted by specially abundant supplies of both vitamins A and D. Unbalanced wheat germ, if given in considerable quantity, might produce permanent degenerative changes in the spinal cord. He was not convinced that there was any widespread vitamin B deficiency in this country. If there was reason to suspect B deficiency in individual children he thought it was wiser to give some yeast preparation, such as marmite, which contained vitamin B_2 as well as B_1, rather than cereal germ which contained chiefly B_1 (the antineuritic element) and possessed the toxic properties just mentioned. Prof. Cowell believed that the improvements in the standard of nutrition and physique were within reach if the comparatively simple measures founded on recently acquired knowledge were adopted.

In the discussion which followed the defenders of oatmeal brought the reply from Prof. Cowell that its toxic effects could be counteracted by plenty of milk and eggs.

Dr. CATHERINE CHISHOLM questioned the need for

giving egg-yolk to breast-fed infants. She found it possible to give chopped raw greenstuffs to babies in their first year. She advocated plenty of water and had great faith in cod-liver oil.

Dr. GEORGE G. CAMPION, speaking as a dental surgeon, was convinced of the truth and importance of Mrs. Mellanby's work. To some extent dentists were divided as to the relative importance of food and function, but these two schools of thought were not really contradictory but complementary.

Dr. H. SCURFIELD thought a better dietary was the most important item in public health advancement. Up to 1910 the feeding of the ex-baby was a matter of old wives' tales. They did not yet know what a weaned infant was ready to digest. For example, some pediatricians were afraid of bananas, but others found that, if crushed, they were good for infants a few weeks old. He commended a paper by Dr. Clara M. Davis on Self-selection of Diet by Newly-Weaned Infants [1] as worthy of consideration.

The PRESIDENT suggested that the Group might take in hand the preparation of dietary tables.

Visit to the Manchester Babies' Hospital.

Among the visits paid by the members to institutions was one to the Manchester Babies' Hospital. This institution, opened in August, 1914, as a 12-cot hospital for babies suffering from disorders of nutrition, has developed into a model hospital with specially built open-air wards, equipped with every scientific device and accommodating 80 babies. The nursing staff, including probationers, numbers 40 and there are in addition three wet nurses for premature infants. A cot and apparatus used for the supply of atmospheres enriched by oxygen and carbonic acid to infants suffering from certain forms of infantile atrophy was demonstrated by Dr. Edith McCrea. Some 30–40 infants, which had had a stationary weight for months without any discoverable cause and had not responded to other treatment, had during recent months gained weight on this régime.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

The Voluntary Hospitals.

LAST year, after an interview with the Secretary of State, a Liaison Committee was formed by the Scottish branch of the British Hospitals Association. The intention was that this committee should keep in touch with the Department of Health so that the Department might be kept aware of the policy of the voluntary hospitals. At the same time, the Scottish Regional Committee of the British Hospitals Association would continue their work of organisation and coördination of the Area Committees. At a recent meeting in Glasgow there seemed to be a little confusion between the functions of those committees. This, however, will clear itself up; since the Liaison Committee is meant to represent all the area committees of the various localities. An important point of the meeting was that general agreement was expressed that the new clauses in the Local Government (Scotland) Bill were satisfactory in that, under the new arrangement, the poor-law stigma would no longer affect hospital admissions. Colonel Mackintosh said that at the first meeting of the Liaison Committee, Major Elliot submitted a proposal, put forward by the Corporation of Glasgow, to empower the local authorities to remove hospital service entirely from the poor-law and to provide hospital treatment for all kinds of sickness, as in England and Wales. As representatives of the voluntary hospitals, said Colonel Mackintosh, the Liaison Committee could not stand for discrimination in quality of hospital treatment between paupers and non-paupers. They recognised that the only way to avoid that was to remove hospital treatment from the poor-law, and that that could only be done by conferring on the Scottish authorities the same general powers as the English authorities. This step was inevitable and, indeed, the removal of the poor-law stigma was one of the conditions of full coöperation between voluntary hospitals and the public authorities. They could not contemplate the growth of a general hospital service which would prevent complete coöperation with the voluntary hospitals, but they advised the removal of the hospital service from the poor-law, under conditions that would provide as full safeguards as possible for the voluntary hospitals. As a result of their meetings with the Department of Health, a new clause had been provided with a view to removing the poor-law stigma from hospital service, and the Scottish voluntary hospitals would secure in the new clause provisions that substantially safeguarded their future place in the scheme of hospital service. With that new power the way was now open for full coöperation in hospital service. Col. Mackintosh's statement marks a very important departure in Scottish hospital coöperation. It is satisfactory to know that, under the new Bill, the whole problem passes on to a more satisfactory plane.

Glasgow Hospital Sunday Fund.

The Glasgow Hospital Sunday Fund shows a slight decrease on the £10,000 collected in 1927. The number of churches contributing was 555, against 522, and the number of Sunday schools was 310 against 301. The average amount per church was £15 17*s.* 10*d.*, as against £17 8*s.* 10*d.* in the previous year; but the average per Sunday school was £3 7*s.* against £3 2*s.* It is interesting to note the relative contributions of the leading churches. Thus the Church of Scotland contributed £2611; the United Free Church, £4300; the Roman Catholic Church, £499; the Episcopal Church, £192. It is also interesting to recall that the great Dr. Chalmers, in his famous parish of St. John's, maintained that the Established Churches ought to support their own poor. He was entirely opposed to the poor-law rate, but was at the same time in favour of public free education. This was before 1845. In spite, however, of the rating system of poor relief, the voluntary hospitals have steadily received contributions from all the leading churches, but the hospital finance of to-day is a gigantic thing compared with what it was in Dr. Chalmers's day, and his parochial proposals could not face the poor-law or Unemployment or Health Insurance of our modern communities. Under his inspiration St. John's parish did marvels; but his efforts were only a beginning, and even poor-law problems, as understood to-day, were hardly known. It is well to keep these facts in mind when comparing superseded systems with the larger systems that developed from them.

The Glasgow Western and the Glasgow Victoria, like the Royal Infirmary, show slight decreases on their contributed income; but this is only to be expected after so many years of serious unemployment.

The Sick Light-keeper on Pentland Skerries.

Owing to the serious gales, there has been great difficulty in conveying advice to the sick lightkeeper on Pentland Skerries. This is one of the most difficult rocks in the North Sea. Normally, mails and provisions are sent by boatmen from South Ronaldshay, five miles off; but in the emergency this was impossible. The keepers at the Pentland Skerries have a wireless receiving set, but not a transmitter. The symptoms of the sick principal were signalled by morse lamp to the boatman at Broughness, and then transmitted to Stromness by telephone. A doctor was able, at stated hours, to send instructions from the northern lighthouse transmitting station at Stromness. For several years the Highlands and Islands Medical Service section of the Scottish Board of Health, now the Health Department, have assisted the local telephone service between islands; but the lighthouses are under the direct management of the Northern Lights Commissioners. The local expense

[1] Amer. Jour. Dis. Child., 1928, xxxvi., 651.

of transmitter equipment has been a standing difficulty and, in spite of the coöperation of the War Office and the Post Office, some localities are still inadequately provided for.

Queen's Nurses.

In the recent appeal for the Queen Victoria Jubilee Institute for Nurses and the Scottish Nursing Associations, Scotland has on the whole done well. As a national memorial to Queen Alexandra more than £87,000 has been subscribed in Scotland, this sum being more than a third of the gross amount of £233,086 collected in Great Britain, Northern Ireland, the Irish Free State, and the Dominions Overseas. The figure aimed at was 7*d.* per head of the population, and this was exceeded in many counties; but the general strike and the coal strike affected the collection adversely. The amount available for the Queen's Institute itself is nearly £47,000. Queen's nurses, it may be noted, are steadily increasing their work for the various health authorities, and the process thus established will be materially accelerated under the new system of local government.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

A Cancer Campaign in Queensland.

DURING the last 15 months more than £50,000 has been collected in response to an appeal for funds to extend the facilities for the treatment of cancer in Queensland. A good deal of publicity has been given to the appeal by the daily press, and popular education in the detection of early signs of cancer, the available methods of treatment, and the danger of "quack" treatment has been carried out by lectures and articles. The campaign is now about to be closed, and the funds collected will be handed over to an appointed trust.

The original intention of the campaign committee, whose president is Dr. E. Sandford Jackson, was to set up a treatment centre in the State capital. This was to be modelled on an institution at Toulouse in France, and the estimated cost was £28,000. The proposal was later modified in favour of providing modern installations for radium and X ray treatment at existing hospitals: it was thought that cancer patients would more readily attend a general hospital than a cancer hospital, whilst early cases are more likely to go to the out-patient department of a general hospital than to a special clinic. The first installation, which was officially opened on Dec. 20th, is now in operation. It consists of a deep X ray therapy plant at the Mater Misericordiæ Public Hospital, Brisbane. The plant is capable of generating 300,000 volts, and the cost was £3500, which includes the cost of installation. Half a gramme of radium has been purchased by the committee for use throughout Queensland. The cost was £6000, and a further £1000 will be spent on insurance, needles, and applicators. Through the good offices of the Governor of Queensland, Lieut.-General Sir John Goodwin, the radium was obtained through the British Empire Cancer Campaign. Sir John was until recently the honorary organiser of that campaign, and the Queensland Committee owe much to his tactful guidance.

The committee are concentrating mainly on the therapeutic aspect of cancer. While accurate records will, of course, be kept, research is limited in Queensland because there is no medical school in the State University. The main difficulty which they have to contend with is the provision of treatment facilities over a very large area (670,000 square miles) with a scattered population (914,000), of whom over half live in the cities, and 32 per cent. in Brisbane alone. It will ultimately be necessary to equip the hospitals at the country centres of Toowoomba, Rockhampton, and Townsville with deep X ray and radium facilities. The Commonwealth Department of Health has already established laboratories at these centres, and the pathological work can thus be performed efficiently. Blair Bell's lead treatment was recently studied by two members of the committee, Dr. Graham Brown and Dr. L. M. McKillop, who were given extensive facilities during their visit to England. The preparation of therapeutic compounds of lead has been begun in Australia.

Judging from personal observation, the public have responded to the instruction about the early signs of cancer. In the dry, hot, and sunny plains of Western Queensland, basal-celled carcinoma (rodent ulcer) of the face, and less so of the hands, is comparatively common. This is attributed to the long-continued exposure to the sun, and the insufficient protection of the face afforded by the narrow-brimmed felt hat in common use. As an offset to this incidence, tuberculous lesions of the skin are extremely rare; in fact, surgical tuberculosis is practically unknown, although pulmonary tuberculosis is fairly common.

MEDICINE AND THE LAW.

Advertisements of Abortifacients.

SOME of the advertisements of alleged remedies for female complaints which newspapers publish are little better than incitements to criminal abortion. It would be a nice legal question how far the newspapers concerned could be indicted as accessories before the fact. Parliament has hitherto not prohibited such advertisements as those of venereal disease remedies were prohibited in 1917; the only possible restriction, therefore, is by voluntary action on the part of the organised bodies of the newspaper and advertising world. The Advertising Association, over which Lord Riddell presides, has issued a most important memorandum to the Press of the country on the advertising of abortifacients. The memorandum frankly emphasises that so-called "irregularity" in a woman is in the great majority of cases a symptom of pregnancy; in the other cases it is probably a symptom at least of a condition requiring skilled medical treatment and sometimes of serious disease. A warning that the advertised "remedy" is not to be used by pregnant women is particularly mischievous as it will amount to a positive inducement to acquire the remedy for the purpose of abortion. The memorandum remarks that the Advertising Association has consulted the Director of Public Prosecutions concerning the advertisement of remedies for female "irregularities" and that he has expressed the firm opinion that such advertising is a serious source of danger to those whom it reaches, and has stated that it is being closely watched by his department. The memorandum also recalls the fact that witnesses before the Parliamentary Select Committee on Patent Medicines made it clear that in most cases these advertised "remedies" are definitely and deliberately purchased where pregnancy is admitted or suspected in the belief that they will terminate that condition. Finally the Advertising Association, after recognising that many newspapers already exclude mischievous advertisements of this sort, calls upon the Press as a whole, and upon all advertising agents and others concerned, to decline to accept any advertisements of drugs or treatment purporting to be remedies for disorders generally termed irregularities, female ailments, or women's complaints. This action will be generally approved by competent opinion as a public service of great value to the community. The indirect effect of the memorandum will not be inconsiderable, for, if any advertising agent or newspaper manager found himself within the reach of the law he would no longer be able to plead ignorance of the effect of the offending advertisement. The action of the Advertising Association will have made the publication of such advertisements in future a particularly deliberate act. If the memorandum does not have the full success which it deserves it will really be desirable for Parliament to take notice of the minority of newspapers which ignore the warning.

Correspondence.

"Audi alteram partem."

OPERATING FOR APPENDICITIS.

To the Editor of THE LANCET.

SIR,—In his Hunterian lecture, published in your last issue, my friend, Mr. McNeill Love, gives some interesting figures concerning the treatment of appendicitis, but I confess I am unable to make out exactly what cases are included in the group treated by expectant methods. Just before Table I. he speaks of "an analysis of the remainder," but under the heading "Treatment of General Peritonitis," he says:—

"In cases of general peritonitis, appendicectomy certainly appears to be the rational treatment, rather than temporising with a perforated or gangrenous appendix, which provides a constant stream of infection."

Are we to conclude, then, that the cases of general peritonitis were excluded from the "remainder," and operated upon as a matter of course and, if so, with what mortality? Even the mortality of 3·8 per cent. given for the total of 607 cases treated expectantly is not the final index of the risks these patients ran, for there may have been some mortality following the subsequent operation for the removal of the appendix. (I had two deaths among my first 618 cases of interval removal). There may also be some of the patients who refused to have the *fons et origo mali* extirpated, who will subsequently lose their lives as the result of an attack of appendicitis, while I take it that the survivors among those who fortunately recovered after the hazard of an immediate operation were ridded of the cause of subsequent appendix trouble.

Even if statistics can be made to prove anything, they are at least some sort of a standard for comparison, and are ever interesting. It has always been my practice to regard acute appendicitis as an emergency requiring surgical intervention. The exact period at which to intervene, and the scope of the operation, I hope have been the subject of an informed discrimination rather than rule-of-thumb, but I have never deliberately advocated the expectant method as an alternative to operation. Over 20 years ago I commenced to classify my cases, as in the following table, and though it may sometimes be difficult to decide in what group a case should be placed, it matters less when the whole of the results are presented.

All Cases of Appendicitis to End of 1928.

Group	—	Cases	Deaths	Percentage
	Acute appendicitis:			
1	without peritonitis ..	135	0	—
2	with localised peritonitis ..	395	4	1
3	with flank or pelvic peritonitis, or both	206	16	7·7
4	with diffuse peritonitis ..	95	28	29·0
5	with residual abscess ..	64	5	7·8
6	with primary localised abscess	424	14	3·2
7	interval removal	913	3	0·3
8	with primary complications	20	9	45·0
	Total ..	2252	79	3·5

The list includes all the cases on which I have personally operated up to the end of 1928. Group 5 consists of cases in which there has been some unlimited peritonitis which has subsided and left an abscess. In group 6 the abscess has developed around the appendix wherever situated, and has been localised from the start. Group 8 includes cases such as acute intestinal obstruction and pylephlebitis, hence the high mortality, but since an existing acute appendicitis was the primary lesion, they cannot fairly be excluded.

I should prefer that your readers should analyse the figures as they wish. If we exclude the interval removals in Group 7, we obtain a grand total of 1339 cases of acute appendicitis, with 76 deaths, a mortality of 5·7 per cent. In these days, with so many men in the profession who have been trained since the problem of the diagnosis of appendicitis has been fairly well understood, I think we have a right to expect that the great majority of cases should reach the surgeon in Groups 1, 2, or 3. In my series this gives a total of 736, with 20 deaths, a mortality of 2·7 per cent. Cases must sometimes go on to develop abscesses, but even so the combined abscess groups (5 and 6) give 488 cases with 19 deaths, a mortality of just over 3·8 per cent.

One or two other points. Under the heading of Criticisms of Delayed Treatment, Mr. Love speaks of the method of drainage to be employed when a gridiron incision has been used. This incision is in every way unsuitable for cases that may require drainage, and surgeons who employ it in these cases will get such a heightened mortality as may well be a factor in converting them to the expectant method. I do not think Mr. Love mentions Battle's incision, but I know that this is frequently employed in the South of England, and is almost as unsuitable for dealing with appendix abscess as the gridiron, and has probably a very adverse effect on the mortality. The oblique muscle-cutting incision of Rutherford Morison[1] gives by far the best approach in acute appendicitis, and is especially useful in dealing with abscess cases. May I say to Mr. Love that " . . . to literally *tear out* (my italics) two appendices which were firmly matted and behind a turgid cæcum," may well have been the cause of the deaths of the two patients, but it was not surgery.

I am sorry I have not the time to comment on the other questions dealt with in Mr. Love's interesting and important lecture.

I am, Sir, yours faithfully,

G. GREY TURNER.

Newcastle-upon-Tyne, Feb. 25th, 1929.

TUMOURS OF THE SPINAL CORD.

To the Editor of THE LANCET.

SIR,—Dr. Theodore Thompson's interesting article on Leptomeningeoma of the Spinal Cord in your issue of Feb. 16th contains some statements which show that old-established error dies hard. With regard to the cerebro-spinal fluid he says first, that "it is generally assumed that the cellular content of the cerebro-spinal fluid below a spinal block produced by a non-inflammatory lesion such as a tumour remains unaltered." This assumption was made by Nonne in 1910, but much has been written on the subject since his paper on the Compression Syndrome, which has shown that this and several other assumptions which he then made were incorrect. For example, the "compression syndrome" as defined by Nonne often results from subacute and chronic meningitis without compression. The absence of cells does not prove the non-inflammatory nature of the spinal block any more than the presence of cells excludes the diagnosis of tumour. Next Dr. Thompson perpetuates the curious error that the syndrome described by Froin in 1903 was characterised by "a normal or but slightly raised cell count." The contrary is the case, as Froin specifically mentioned the presence of "lymphocytose" as constituting the third element in the syndrome along with "xanthochromie" and "coagulation massive." Dr. Thompson also speaks rather loosely of "spontaneous coagulation" which is not by any means the same thing as "coagulation massive" or "en masse" as Froin described it. Some spontaneous coagulation in a yellowish fluid may be present in cerebral as well as in spinal tumours, and is common in a variety of other conditions; "coagulation en masse" is much more rare, and is confined to spinal conditions of which the commonest is spinal block. If the term "syndrome of Froin" is to be retained,

[1] THE LANCET, 1901, i., 533.

it should surely be limited to its original significance, or at least confined to fluids which are very highly albuminous, in which case one might use some such term as "modified syndrome of Froin." Froin's cases were, of course, not cases of spinal tumour, but of subacute meningitis probably of syphilitic origin.

Dr. Thompson then speaks of "increase of mineral salts" in such fluids. If by that term he refers to calcium he is correct, but sodium chloride is also a mineral salt and it is constantly below the normal percentage in highly albuminous fluids. He is also somewhat inexact in his reference to the Queckenstedt phenomenon, which he includes among "general methods for raising the general pressure in the (subarachnoid) space." The value of Queckenstedt's method of compressing the jugular veins is that the increased pressure which it causes is limited to the contents of the cranium and may be transmitted thence to the spinal theca in the absence of spinal block. Anything which raises the *general* cerebrospinal fluid pressure, such as coughing or holding the breath, or compressing the patient's abdomen, will cause a rise in the lumbar manometer whether spinal block is present or not. In fact the evidence given by the Queckenstedt method is most definite when coughing causes a rise in the manometer but jugular compression does not.

Again, why does Prof. Turnbull use the obsolete term "gliosarcoma" in describing a typical neurofibroma? Whether the view be taken that these tumours are fibromas growing from and attached to nerves, or tumours derived from some more specifically nervous tissue such as the sheath of Schwann, the name "neurofibroma" is equally applicable and it is consecrated by many years of use. The more modern terms "neurinoma" or "Schwannoma" imply subscription to definite theories as to the origin of the tumour, and, until these theories are proved, should be avoided. But it seems unnecessary to retain such a meaningless term as "gliosarcoma."

As a final question, why is the name "leptomeningeoma" used in the title of the paper, when one of the tumours arose from a nerve root and the other two from the dura mater?

I am, Sir, yours faithfully,

J. G. GREENFIELD.

Pathological Laboratory, National Hospital, Queen-square, W.C., Feb. 19th, 1929.

THE NUCLEUS OF THE CANCER CELL.

To the Editor of THE LANCET.

SIR,—In reading Sir Charles Ballance's interesting historical sketch of the present position of the cancer problem, I notice that he mentions "nuclear degeneration" as characteristic of the cancer cell (THE LANCET, Feb. 16th, p. 323). After prolonged study of cancer cells in the living condition, with dark-ground illumination and with various methods of staining, I have come to the conclusion that the nucleus of an actively growing epithelial cancer cell shows no sign of degeneration. Indeed, the nucleus itself seems larger than the nucleus of the normal epithelial cell from which it has been derived.

Other facts point in the same direction. Epithelial cancer cells have a high lecithin content. Thus, if a small portion of cancer tissue be kept in a closed cell in normal saline, myelin lecithin threads are seen to develop from and around the edge of the tissue. Cancer cells show well-marked Golgi bodies. In this connexion Ludford and Cramer's observations (summarised in the same issue of THE LANCET, p. 351) on the altered position of the Golgi body in thyroid cells in exophthalmic goitre are very significant. Whatever may be the ultimate nature and origin of the Golgi body, the fact that its position and orientation in the cell give some indication of the direction of secretionary flow may have important bearings on the cancer problem. In the Mitchell Banks Memorial Lecture, and in various communications to medical journals, I have shown that epithelial cancer cells, like some normal epithelial cells, elaborate definite, and, in some cases, considerable amounts of a substance which has a very strong affinity for, and stains a mauve colour with, iodine. Although the exact composition of this iodophil substance is not definitely known, its presence in epithelial cancer cells and in *certain* sarcoma cells, as in leucocytes and some other cells, is characteristic, not of degeneration, but of cellular activity. No doubt dead and partially devitalised cancer cells can be obtained from the central portions of any cancerous tumour which show clear evidence of nuclear degeneration, but the actively growing cells at the margin, with their capacity for cell division, do not present such changes.

I notice that Sir Charles Ballance does not favour attempts to educate the lay public on the subject of cancer. We shall all agree with him in desiring the intensive education of the family doctor in all newly discovered facts which may aid him in making an early diagnosis. But our experience at Leicester, as indeed throughout the country, is that a marked reluctance on the part of patients to seek early advice is mainly responsible for the loss of valuable time. The further education of the doctor will be of little avail unless sufferers from cancer, real or suspected, can be induced to seek advice. We hope that our local cancer committee, established under the joint auspices of the municipal health authority and the Leicester Royal Infirmary, with its associated cancer control clinic, is doing something by educational methods to remove this reluctance, and thus to bring about the earlier recognition and treatment of the disease. It has, at any rate, been instrumental in dispelling from the minds of a number of persons who have sought its help, but who were found on examination to be free from cancer, that "fear and dread" which Sir Charles Ballance so rightly deplores.

I am, Sir, yours faithfully,

Leicester, Feb. 21st, 1929. C. J. BOND.

VIRILISM DUE TO HYPERNEPHROMA.

To the Editor of THE LANCET.

SIR,—We have been asked, for the sake of future reference, to give a further note on a Case of Virilism due to an Adrenal Cortical Hypernephroma. The case was reported as a successful operation for the removal of a malignant adrenal tumour in THE LANCET of Oct. 8th, 1927 (vol. ii., p. 745). At that time the symptoms had entirely disappeared; unfortunately, this satisfactory condition did not persist. In November, 1927, symptoms of virilism recurred and a mass of growth was palpable under the right rib margin; an operation showed that this tumour was quite beyond the reach of surgery, and it was decided to give the patient a course of deep X ray therapy. Death occurred on Nov. 2nd, 1928.

We are, Sir, yours faithfully,

C. G. MURRAY.

Sheffield, Feb. 24th, 1929. GRAHAM SIMPSON.

DESIGNATION OF WHITE BLOOD CELLS.

To the Editor of THE LANCET.

SIR,—More in sorrow than in anger one cannot help reflecting after reading Dr. A. T. Todd's article on a case of *Bacillus abortus* infection in the last issue of THE LANCET (p. 388) how poor indeed must be the English language if it is found necessary to borrow German words to designate the various white cells in making a differential blood count. Perhaps I am doing the author an injustice; perhaps there is a purpose behind his method. May it be that he wishes to add the last straw and break the back of the hopeless confusion which pervades hæmatological nomenclature. Is it not time that an international effort be made to clear the ground?

I am, Sir, yours faithfully,

Wimpole-steet, W., Feb. 23rd. HUGH S. STANNUS.

THE INJECTION TREATMENT OF VARICOSE VEINS.

To the Editor of THE LANCET.

SIR,—Though altogether out of sympathy with the injection method of treatment of varicose veins, I have been content hitherto to remain silent on the subject, but in view of the annotation on p. 408 of your last issue I feel impelled to do more than merely register a silent dissent from the conclusion there advanced. In this annotation it is assumed that the case for the injection treatment is now proved beyond question, and the reader is left to infer that this point of view is now generally accepted. I quote from the article :—

> This treatment is so simple, so effective, that it has ousted almost completely the treatment by operation. On the whole, it can be said that the injection methods now generally adopted are suitable for routine use. The risk is less than operation and the results are better.

This is a general statement that should hardly be made without a simultaneous presentation of the proofs upon which it is based.

As one who not merely does not believe in the injection method, but, indeed, profoundly disbelieves in it, may I say that I am prepared to accept only one part of the statement—namely, that the treatment is simple. To my mind its simplicity is one of its chief drawbacks, in that it tempts the inefficient and perhaps the less scrupulous members of the profession to carry it out too often without any, or sufficient, justification. I do not admit as proved that the method is as effective as operation in cases that really require treatment. I am not concerned with the other cases that have so enormously swelled the statistics of recent years, cases many of them that required no active treatment. Nor am I prepared to admit that it has yet been decided whether the risk of injection or of operation is the greater.

I am not desirous of initiating a correspondence on the subject, nor am I inclined to take part in any correspondence that may emerge, but in view of your article, and the assumption therein that the matter has been settled now beyond dispute, I feel that it is necessary to make this protest. I profoundly believe, and I am accustomed to teach my students, that the injection method of treatment is unsound scientifically, and therefore unjustifiable surgically. I shall be told that I am not entitled to express an opinion on the subject because I have not personally put the method to the test of trial—which is true. But I reply that I have not put it to the test *because* it is unsound, and therefore surgically unjustifiable. The avowed purpose of the method is the obliteration of the lumen of a vein by the production of thrombosis. It is my considered opinion that the deliberate production of thrombosis by the surgeon—or by anyone—is unjustifiable. Every surgeon knows of the disastrous effects of the thrombosis and embolism which occur occasionally after any surgical procedure. Can it then ever be justifiable deliberately to encourage such a happening?

I shall be told that the type of clot which is sought—and perhaps obtained—in the injection treatment of veins is different, and behaves differently, from the thrombus we fear so much in other conditions. I am not convinced that it is in any essential way different, or can be trusted to behave differently. I shall be told that obliteration of veins produced in this way is an imitation of Nature's method of cure. I am still unconvinced. And even if this be admitted, I would humbly point out that even Nature makes mistakes sometimes. Most of us could cite cases of death following upon simple thrombosis of varicose veins, with resultant embolism, where no operative procedure of any kind had been carried out. I dare to suggest that even now we have not got a full or a true record of the ill-results, and even of the fatalities that have followed upon the injection treatment of veins; but these will yet emerge. Only the other day the public press contained the account of an inquest on a fatal case of the kind, though, of course, the medical evidence made much of the comparative infrequency of such an untoward happening.

But apart altogether from actual fatalities, it is certain that there have been many more failures of cure than are generally admitted, even as there have been very many more cases of sloughing of the skin over the injected veins than the writers on the subject seem to be prepared to confess to. I have myself seen a number of these, and the resultant ulcers are nasty enough, and difficult enough to get to heal. Further, in more than one of these cases which I have seen the injection treatment had been carried out upon veins that called for no such active procedure at all. This supports the view, which I stated earlier, that the numbers of cases submitted to injection have been artificially swollen; that many quite young girls, who might happen to have an odd superficial vein, causing no trouble whatever, but perhaps showing as a bluish streak through the diaphanous silk of the modern female hose, have been able to induce someone to try to remove the offending streak by the medium of injection. Indeed, my suspicion in this direction is more than a suspicion; it is a definite conviction. I have several times been asked myself to do the deed—and have refused. In all probability someone more complaisant came to the rescue.

For these and other reasons, therefore, I wish to make it clear that there are still those—and I am one of them—who regard the injection treatment of varicose veins as an unscientific procedure, and therefore unsurgical—certainly not free from risk. It may not be out of place here to say that the same arguments as I have advanced above against the injection of varicose veins—and other arguments perhaps even more potent—I would put forward in respect of the injection treatment of hæmorrhoids.

I am, Sir, yours faithfully,

ARCHIBALD YOUNG.

The University, Glasgow, Feb. 25th, 1929.

OSTOCOPOS.

To the Editor of THE LANCET.

SIR,—There is a curious word which is found in Theophrastus (*Physica*, 7) as an adjective, ὀστεοκόπος, translated in Liddell and Scott as bone "shattering." It occurs in Hippocrates 396, 9, and in Galen as a substantive, which Liddell and Scott translate "a sense of weakness, as if one's bones were giving way." It next appears in Latin under the form "Ostocopos" but only twice, in Serenus Sammonicus, Cap. XLVIII., 892, and in Pelagius Vegetius, *de Arte Veterinaria* III., 10, and it is given in Du Cange's Glossarium ad Scriptores Mediæ et Infimæ Latinæ (Paris, 1688), but it only cites Sammonicus and translates it "Dolorem sentiens in ossibus." Sammonicus, who wrote about A.D. 225 in the reign of Alexander Severus, devotes a whole chapter to it, but his work has never attracted any attention in England though widely known on the continent in the seventeenth and eighteenth centuries.

I think it is clear that he is describing dengue, and this is the only description of that disease in ancient writers. He says: "Sometimes a new cause of sudden pain makes its appearance, of which the origin is quite obscure, and it must be controlled by well-established lines of treatment" . . . . "but if fever with a very high temperature (febres calidæ) waste the tissues, &c.," . . . . and, again (901), "besides which it dries up the excessive chyme in the stomach, which more and more forebodes that the tissues are done for," and he winds up by saying, "but in cases of prolonged fever fresh chicken broths made from an old cock are very useful, being restorative to limbs that show subsultus." The heading of his chapter is "On Sudden Pain and Bone Aching."

We have here a description of an acute and sudden disease of epidemic occurrence (nova causa) in which pain in the bones is the most marked symptom. The gastric symptoms in dengue are well known. "gastric oppression is urgent and vomiting may occur," Sir Patrick Manson in Allbutt's "System of Medicine," II., p. 380. Dengue has been known on the Mediterranean coasts since 1779 when it was first

recognised and must have been long known in Africa as the name is a Swahili word. It is quite possible that the disease was more fatal 1700 years ago than it is now. I am, Sir, yours faithfully,

Forest Row, Sussex, Feb. 20th, 1929. A. MAUDE.

TONSILLECTOMY IN CHRONIC ARTHRITIS.

To the Editor of THE LANCET.

SIR,—I must apologise for causing Dr. Warren Crowe to waste his time. The sentence on which he has based his calculations was never intended for more than a warning against undue enthusiasm. The "7000" was, I regret to say, a figure even more rhetorical than I realised at the time I wrote. It was based roughly on the total admissions to the Royal Bath Hospital for the six years. On the terms of the original foundation the hospital regulations allow for a fortnight's treatment. If a patient's stay is prolonged a "readmission" is recorded. For instance, in 1921 the total "admissions" were 1288; but of these 498 were "readmissions." For 1921, therefore, 730 individuals were treated: about half of these suffered from arthritis. The 7000 consequently falls to the ground—except as a caution against enthusiasm.

But Dr. Crowe refers to 7000 cases of "rheumatic disease"—a term which I suspect of being rather narrower than mine, which included all forms of arthritis, and, in addition, a large number of cases of fibrositis and neuritis. The facts, as near as I can ascertain them, are that during this six-year period 2333 cases of all forms of arthritis were admitted. Of these, 1750 belonged to the infective arthritis group, comprising:—

(*a*) Rheumatic fever and subacute rheumatism .. 245 cases.
(*b*) Specific infective arthritis.
(*c*) Focal arthritis with definite focus .. .. .. } 1470 ..
(*d*) Indeterminate: focus unknown .. .. }
(*e*) Zymotic—i.e., scarlet fever, diphtheria, &c.

It is, of course, principally with these that tonsillectomy requires consideration; but, I claim, more consideration than Dr. Crowe is prepared to allow.

I am, Sir, yours faithfully,

Harrogate, Feb. 18th, 1929. A. B. PAVEY-SMITH.

THE LEGAL VALUE OF A MEDICAL REFEREE.

To the Editor of THE LANCET.

SIR,—The Laws of England provide that a judge can demand the services of a medical expert as a referee in cases where medical matters are the predominant features of a trial. As a matter of fact, the Home Office has medical experts whose evidence it calls in cases of suicide and murder. This evidence is indispensable and forms a prominent part of the problem which goes to the jury. It has always seemed to me strange that judges never seek for their personal guidance the services of a medical referee in cases of insanity, malingering, and damages claimed for medical malpraxis. The custom—were it adopted—would in no way detract from the prestige of Law nor of a judge, and it would certainly add to the dignity of his Court. It is not an edifying sight to see opposing medical experts frankly becoming advocates for their respective sides and delaying the proceedings of the Court while coaching their counsels in attempts to trick their opposing colleagues into misleading admissions. The omission to obtain the services of a medical referee sometimes leads to a negation of justice although law may be satisfied. In dealing with trials concerning navigation an expert navigator acts as referee to the judge. The failure of a judge to avail himself of the Law's provision in cases of medical and legal importance cannot be due to his greater knowledge of Medicine than of Navigation. The reason seems to me to be that Law does not yet realise the greatness of Medicine now compared to its position in the past. Other departments of State understand the overwhelming value of this science. There can be no doubt that eventually Law will be compelled to modify its procedure in the direction I have indicated when dealing with cases of combined medical and legal complexity.

I am, Sir, yours faithfully,

Harley-street, W., Feb. 25th. G. LENTHAL CHEATLE.

*** At the Bristol County Court on Feb. 19th medical evidence was heard on both sides in an arbitration under the Workmen's Compensation Act. In delivering judgment, which was limited to a declaration of contingent liability, his Honour Judge Parsons expressed the hope that (if there was a future hearing of the case) he might have the assistance of a medical assessor, as it was difficult for a layman to decide a point upon which medical experts were in conflict.—ED. L.

URÆMIA SIMULATING ACUTE INTESTINAL OBSTRUCTION.

To the Editor of THE LANCET.

SIR,—Is there not an error in Dr. Leslie Smith's and Mr. Kenneth Heritage's argument? Discussing their most interesting case of uræmia associated with acute intestinal obstruction, they say: "There is, in this case, no suggestion of mechanical interference with the urinary tract" (THE LANCET, Feb. 23rd, p. 416). I take it they are referring to the urinary tract distal to the kidney; but the question is, where does the urinary tract begin? Does it begin in the calices of the kidneys; or may the Bowman's capsules be legitimately regarded as its beginnings? In the latter case—if the uriniferous tubules may be considered as integral parts of the urinary tract—mechanical interference with parts of the tract in so far from being clearly absent in their case seems to have been clearly present. That at least must be so if the case presented the signs usual of acute intestinal obstruction—increased tonicity of the abdominal wall during the pains, common to all colics, and the marked contractions during the strainings, whether associated with the vomitings or not.

There is a good deal to be said in favour of such a view. The idea is supported by the difficulty of believing that absorption of intestinal contents (putrefactive or not) is a special feature of the obstructed gut—the evidence is that fluid is poured from the gut wall into the lumen of the gut (hence (1) the anhydræmia, and (2) the copious vomitings); and by the difficulty of believing that if intestinal poisons (changed proteins) were absorbed and caused the renal disability, the process of such absorption should so soon cease with the relief of the obstruction, as indicated by the amazingly rapid improvement in the patient's general condition and the (presumably) slower yet "dramatic" fall in blood-urea, the direct consequence of operation. This latter clearly does not suggest a toxin had been in play; on the contrary, it opposes that supposition.

Obstruction to the urinary outflow, whether caused by phimosis, an enlarged prostate, an obstructed ureter, all affect the patient and his blood-urea; nor does the obstruction have to be complete to do so. Thus, a series of compressions of the kidney, if marked enough, may quite reasonably be impugned as causal of renal aberration and to some extent at least of the oliguria (not mentioned in this case). We may perhaps go even further and wonder whether such compressions, as subtle in their play as poisons, under somewhat different physical conditions, may not be causal of that nephrosis so beloved of physicians as patently the product of indefinable and unknown toxins. I am, Sir, yours faithfully,

Rugby, Feb. 23rd. R. H. PARAMORE, F.R.C.S.

SPINAL ANÆSTHESIA IN ABDOMINAL SURGERY.

To the Editor of THE LANCET.

SIR,—Some 12 years ago I urged in your columns [1] the more general adoption of spinal anæsthesia for

[1] THE LANCET, 1916, ii., 645.

acute abdominal cases in patients of all ages, from 6 months to 70 years. It is interesting and pleasing to find this advocacy supported by Mr. McNeill Love last week in his Hunterian lecture. What preparation of stovaine Mr. Love uses he does not say, but with the 10 per cent. solution of stovaine in sodium chloride the head should be lower than the feet as from the time of injection, and a high Trendelenburg position can be adopted immediately. Using the solution named I have never been able to demonstrate that posture has any effect on the level of anæsthesia attained, and clinical findings therefore support Dr. Howard Jones's contention that spread through the cerebro-spinal fluid is by diffusion. In that paper, too, is indicated a technique for the conduct of all operations in which spinal anæsthesia alone is used, including those on the upper abdomen. It is heartening to those of us who have been ardent supporters of spinal anæsthesia for many years to find that Prof. Pannett supports its use and pleads for further consideration of this unjustly maligned method.

I am, Sir, yours faithfully,

PERCIVAL P. COLE.

Harley-street, W., Feb. 25th, 1929.

To the Editor of THE LANCET.

SIR,—I acknowledge my error in supposing that diffusion adds material assistance to gravity in the distribution of novocaine and thank Prof. Pannett for the correction.

I am, Sir, yours faithfully,

W. HOWARD JONES, M.B., B.S. Lond.

London, W., Feb. 26th, 1929.

PROPHYLAXIS OF INFLUENZA.—Dr. A. Graham-Stewart writes that the number of organisms per c.cm. in the vaccine he uses (THE LANCET, Feb. 23rd, p. 415) should have been given in *millions*, not thousands.

Public Health Services.

INFLUENZA.

CLINICAL reports from various parts of England and Wales indicate little change in the position beyond a somewhat more even distribution of the disease. Incidence is still reported high in the north-western area, particularly Manchester and Liverpool, although a decrease is admitted in the latter place. Prevalence increases, if not at the previous rate, in London and the home counties. Elsewhere in the country the epidemic is widespread except in South Wales and Bristol, where it appears definitely to have declined. Sheffield, which has hitherto been reported free, is now affected; Nottingham and Stoke-on-Trent, where some incidence was reported at the outset of the epidemic and which were subsequently reported free, are now again stated to be affected. The disease is reported generally to be mild, although otorrhœa is mentioned as a complication in the Manchester district.

On the Continent the epidemic is abating except in certain towns of Western and Southern Germany and in parts of Spain.

THE LOCAL GOVERNMENT (SCOTLAND) BILL.[1]

THE Local Government (Scotland) Bill, having got through the Committee stage in the House of Commons on Feb. 25th, emerges with certain important new features. One of the most interesting new clauses is that which deals with the treatment of the sick and with hospital organisation. For the first time sickness is to be separated from the poor-law and the distinction between poor-law patients and public health patients is to disappear. County and town councils are given the power to submit schemes for reorganising the hospital facilities at their disposal so as to provide treatment for sick persons in their area. These schemes will go to the Department of Health for Scotland (as we must now call what we used to know as the Scottish Board of Health) for approval, the Department being directed to have regard to any other facilities for treatment "including those provided by any voluntary hospital or other institution." Some comment was evoked by the fact that the clause is not mandatory, but permissive. The Government spokesmen explained in reply that elsewhere in the Bill (in what was clause 50) the Secretary of State for Scotland, if satisfied that a council has failed to achieve or maintain a reasonable standard of efficiency in the discharge of its public health functions, can reduce its grant. But this is, of course, neither so peremptory nor so prompt a method. In addition to the submission of schemes as already mentioned, there is power under the new clause for the councils to represent to the Department that their available hospital facilities are inadequate for the reasonable requirements of the area and to submit schemes for extending existing facilities. In that event the Department, before approving such extension schemes, has to be satisfied that the council has taken "reasonable steps to seek and to continue to secure full coöperation with every voluntary hospital, university, or medical school within or serving the area of the council." Where the Department has approved either kind of scheme, the county or town council may accordingly "provide, furnish, and maintain, for the accommodation of sick persons residing within their area, hospitals temporary or permanent and houses of reception for convalescents," and for this purpose may either themselves supply the accommodation, or may contract for the use of it, or agree with the managers of existing accommodation on payment, or utilise any hospital, house, or other buildings already possessed by the council. Another important new clause is that for the recovery of expenses of treatment. Under the old law the poor-law authority could recover expenses if the supposed poor person had some money put away somewhere; it is not unreasonable to put all the hospitals under the new arrangements upon the same basis. There remains presumably an exception for infectious disease since it is usual to remove the infectious case to a special institution under an almost compulsory power for the protection of the community. Objection was raised that demands may be made in maternity cases which may be deterrent to the patient and which are in contrast with the free treatment given for venereal disease. The clause, however, got its second reading without a division and was not altered in Committee.

The general position of the proposed reform of Scottish local government may be summarised as follows: The original idea was to abolish the parish councils and transfer their functions to the bigger reconstituted authorities. As in the English parallel, there was naturally an objection that the great merit of the parish councils was the maintenance of local touch in administration. The Government then brought in a new clause to set up district committees for landward county areas. The new district councils will contain the local county councillors and other elected representatives of the local area. The new county councils will be allowed to delegate certain functions under approved schemes; it will be interesting to see where outdoor and indoor relief administration will respectively be allocated in consequence. There will naturally be much sentimental regret at the disappearance of the old parish councils in Scotland, bodies very different from the parish councils in England. There is gradually being evolved a new system of local government for both countries on

[1] The discussion on the Bill in Committee of the House of Commons is reported in our Parliamentary columns.—ED. L.

roughly parallel lines. On the whole the reception of the Scottish proposals by those from whom criticism was expected seems by no means unfavourable.

MENTAL HOSPITAL REPORTS.

SOME SCOTTISH HOSPITALS.

WE welcome the appearance of the reports of the *Crichton Royal Institution, Dumfries*, and the *Glengall Hospital*, at *Ayr*, for the full year 1928. They are the first of their kind to reach us, commendably early in 1929. On Dec. 31st last there were 1043 patients in the Crichton Hospital, an increase of 53 during the year. Of these, 297 were on a voluntary basis. There were 106 more patients admitted during the year than the average number, so the staff had a busy time. During the year 459 voluntary patients were under treatment, and only two of them had to be certified. The increase in the number of voluntary boarders was especially marked among private patients. The majority were middle-aged people who had not previously had a mental breakdown. The recovery-rate was 25·5 per cent. of the voluntary and 23·5 per cent. of the certificated cases. The death-rate was 7·3 per cent., and the general health was satisfactory, except for three cases of scarlatina among the nursing staff. A new reception hospital was opened in November, and in May an arts and crafts pavilion was inaugurated to expand and improve previous arrangements for occupational therapy. An occupational instructress has been appointed, in addition to the supervisor of outdoor occupations and recreations, who has been at work for ten years. The grounds supplied the institution with vegetables, fruit, and flowers, and the farm had a successful year. One hundred patients had parole outside the grounds, and just over a hundred within them. The famous rock garden, laid out four years ago, already contains more than 2000 named specimens. Twenty-two nurses and five attendants obtained their M.P.A. certificate during the year, four with distinction.

The Glengall Hospital at Ayr had 605 patients on its books at the end of the year, 12 of these being on a voluntary basis. More than a quarter of those admitted were in a precarious state of health physically. That the type of case sent to the hospital has greatly deteriorated since the war is proved by the fact that, in spite of a comparable average admission rate, the average death-rate, which was 36 per cent. from 1909–13, has risen to 55 per cent. between 1924 and 1928. This means a lower recovery-rate and greatly increased work for the nursing staff. The recovery-rate for the year was 31·5 per cent. and the death-rate 15·7 per cent.—the highest on record. Procrastination in seeking treatment is declared by the medical superintendent to be largely responsible for the increase. General paralysis heads the list of causes of death despite modern methods of treatment, and there were 12 deaths from tuberculosis. Autopsies were held on 88 per cent. of cases. Apart from debility, the general health was good. Occupational therapy has been initiated, and—apart from bedridden patients—only 36 patients were unoccupied at the time of the Commissioner's visit. Their work was chiefly in the grounds or laundry, but a certain number assist the artizans in the workshops. Arrangements are at last to be made for dental care. The hospital now has 48 per cent. of its staff fully trained and certificated, four nurses and five attendants having obtained their M.P.A. certificate during the year.

The report of the *Stirling District Board of Control* for 1927–28 shows that on May 14th last there were 943 certified and 25 voluntary patients in the mental hospital at *Larbert*, an increase of 59 during the year. In addition, there are 88 patients in the lunatic wards of poorhouses, 83 boarded-out cases, and 155 mental defectives. The committee notes that, since the hospital was opened in 1869, over £200,000 have been spent on it. The capital expenditure was met by mortgages, and the assets vested in the district board now greatly exceed the balance of mortgages still outstanding. Of the 23 voluntary patients admitted during the year, 13 were chargeable to parish councils, reminding us again of the advantage Scotland has over England in the treatment of early mental disorder among the poorer classes. The recovery-rate was 37·35 per cent.; 49 patients were discharged recovered within six months of their admission, and one case of melancholia left recovered after eight years; 16 patients were sent out on trial, and only one had to return. The death-rate was 8·2 per cent., and the cause of death was verified by autopsy whenever permission could be obtained. Except for mild influenza, the general health was satisfactory. Electrical and ultra-violet ray treatment have proved beneficial for many patients, and the X ray apparatus was used diagnostically in 33 cases. The health of a large number has shown improvement as a result of the systematic attention given to their mouths and teeth by the dental surgeon, who visits weekly. During the year he extracted 1036 teeth and filled 120 more. Only eight patients had healthy mouths, and very many had acute gingivitis. The occupation department employs a great number in various handicrafts, and special attention is paid to those whose symptoms and habits preclude other forms of employment. Others have worked in the grounds, which supply the institution with flowers and vegetables. The wet, dull weather spoilt the year for the farm, but the crops were secured in fair condition. Sixteen nurses and 11 attendants obtained their certificate during the year, bringing the total to 45.

On May 16th, 1928, there were 729 persons in the *Inverness District Asylum*, the steady increase of the last four years being maintained. The increase in population is not due to an increase in the admissions but to the large proportion of incurable permanent cases. This has meant considerable difficulty in finding suitable accommodation; no less than 47 of the women are more than 70 years old and in need of constant nursing care. The recovery-rate of 34·8 per cent. is therefore a high one. Nineteen patients went out on probation during the year, of whom one returned. The death-rate of 7·8 per cent. is a great improvement on last year. Phthisis and senile decay were responsible for half the deaths. Twelve autopsies were held. The nine patients suffering from phthisis are nursed in the open air. The grounds and buildings gave employment to 446 patients, but there is no occupational therapy department. Apart from a shortage of milk, the supply of farm produce was very satisfactory. Eight nurses and four attendants obtained their M.P.A. certificate. The report includes an interesting summary of the structural history of the asylum since 1864, and a list of the certificated nurses. There must be very few institutions that still retain the name "asylum," which has unfortunately acquired an evil connotation in the public mind.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED FEB. 16TH, 1929.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 231; scarlet fever, 1966; diphtheria, 1169; enteric fever, 37; pneumonia, 3658 (last week 3898); puerperal fever, 41; puerperal pyrexia, 99; cerebro-spinal fever, 19; acute poliomyelitis, 4; acute polio-encephalitis, 2; encephalitis lethargica, 25; dysentery, 2; ophthalmia neonatorum, 108. No case of cholera, plague, or typhus fever was notified during the week.

Counties reporting large numbers of cases of pneumonia are as follows: London, 562 (last week 689); Chester, 173 (172); Durham, 168 (133); Essex, 167 (136); Lancaster, 906 (1102); Stafford, 113 (153); Warwick, 131 (132); Yorks West Riding, 296 (292)—from which it will be seen that the incidence generally is on the down-grade.

The number of cases in the Infectious Hospitals of the Metropolitan Asylums Board on Feb. 19th–20th was as follows: Small-pox, 39 under treatment, 6 under observation; scarlet fever, 1815; diphtheria, 2000; measles, 51; whooping-cough, 932; puerperal fever, 18 (plus 4 babies); encephalitis lethargica, 80; poliomyelitis, 5; "other diseases," 60. At St. Margaret's Hospital there were 10 babies (plus 6 mothers) with ophthalmia neonatorum.

Deaths—In the aggregate of great towns, including London, there was no death from small-pox or enteric fever, 77 (0) from measles, 9 (1) from scarlet fever, 229 (80) from whooping-cough, 48 (8) from diphtheria, 48 (10) from diarrhœa and enteritis under two years, and 1243 (393) from influenza. The figures in parentheses are those for London itself.

The number of deaths from influenza during the previous eight weeks was 69, 83, 99, 122, 179, 321, 652, and 987 respectively, the figures for London during the same period being 9, 15, 18, 34, 39, 77, 198, and 331, from which it is seen that the rate of rise has moderated in London as elsewhere. In the week under review deaths were attributed to influenza: Manchester, 119; Leeds, 56; Liverpool, 46; Salford, 34; West Ham, 33; Middlesbrough, 31; Birmingham, 29; Bolton, 25; St. Helens, 20; Stoke-on-Trent, 19; Oldham, 18; Norwich and Croydon, each 17; Portsmouth, 16; Ealing and Leicester, each 14; Walthamstow and Stockport, each 12; Birkenhead, 11. No other great town had as many as 10. (Glasgow reported only 33, Edinburgh 68, and Belfast 41.) Liverpool reported 21 deaths from measles, Sunderland and Cardiff each 9. Deaths from whooping-cough were reported from Manchester, 23; Salford, 14; West Ham, 11; no other large town more than 10, but the deaths were widely distributed.

The number of stillbirths registered during the week was 314 (corresponding to a rate of 54 per 1000 births), including 52 in London.

Death-rates from Influenza for the Last Quarter.

The death-rate from influenza in the different parts of the country is set out by the Registrar-General in a comparative table of figures since December, 1928.

Week ended—	Aggregate.	North.	Midlands.*	South.*	Wales.	Greater London.
Dec. 8th, 1928	0·16	0·20	0·20	0·12	0·13	0·10
,, 15th, ,,	0·16	0·19	0·12	0·32	0·20	0·14
,, 22nd, ,,	0·18	0·23	0·16	0·28	0·20	0·11
,, 29th, ,,	0·22	0·29	0·19	0·24	—	0·17
Jan. 5th, 1929	0·26	0·26	0·29	0·36	0·20	0·26
,, 12th, ,,	0·32	0·35	0·43	0·28	0·33	0·27
,, 19th, ,,	0·47	0·52	0·44	0·80	0·27	0·38
,, 26th, ,,	0·85	1·05	0·36	1·52	0·47	0·81
Feb. 2nd, ,,	1·73	2·14	0·48	2·56	0·53	1·89
,, 9th, ,,	2·56	2·96	0·77	2·64	0·80	3·20
,, 16th, ,,	3·29	3·54	1·84	2·66	0·94	4·34

* Excluding Greater London.

The figure is the number of people per 1000 of population who would die in a year if the death-rate of the week in question were to persist for that period.

DONATIONS AND BEQUESTS.—Mr. Edwin Norton, Great Central Hotel, Marylebone, London, and formerly of Mansfield, Weybridge, left £2000 to St. John's Institution for the Deaf and Dumb, Boston Spa.—Mrs. Eliza Jane Briggs, Bowdon, Cheshire, widow of Thomas Briggs, an ex-Lord Mayor of Manchester, left about £30,000 to Manchester Charities, including, among other bequests, £2500 to the Manchester Royal Infirmary, £2000 to the Altrincham General Infirmary, £1000 each to the Manchester and Salford Hospital for Skin Diseases, and to St. Mary's Hospital for Women and Children, Manchester; £500 each to the Manchester Children's Hospital, Pendlebury; Henshaw's Blind Asylum; the Northern Counties Hospital for Incurables, the Adult Deaf and Dumb Institution, Chorlton-cum-Medlock, and the Manchester and Salford Branch of the Society for the Prevention of Cruelty to Children. The residue of the property, about £16,000, goes to the East Lancashire Home for Disabled Sailors and Soldiers, Park-lane, Broughton.—Mrs. Lucy Greene, of Bydinghurst, Cranleigh, left large bequests for charitable purposes, including £8000 to the Lebanon Hospital for the Insane, £5000 to the National Society for Epileptics, Chalfont St. Peter, and £500 to St. Dunstan's Hospital.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

LOCAL GOVERNMENT (SCOTLAND) BILL.

THE House of Commons went into Committee on the Local Government (Scotland) Bill on Wednesday, Feb. 20th. Mr. J. F. HOPE, Chairman of Committees, was in the chair.

Failure to Discharge Functions.

On Clause 25 Major ELLIOT (Under Secretary of State for Scotland) explained that the clause provided that where the Scottish Department of Health were satisfied after a local inquiry that a town council of a small burgh had failed to discharge their functions with respect to the provision of water-supply, drainage, or housing, the Department might authorise another authority, such as the county council, to discharge those duties. It was, however, only reasonable that this overriding power should apply both ways, and he therefore moved an amendment providing that if a county council were in default the particular duties in that area should be taken over by another authority—possibly the burgh authority.

Mr. STEPHEN moved an amendment to the amendment making it mandatory on the Department of Health to order in the case of default by one authority that the duties should be undertaken by another body.

Mr. WATSON (Lord Advocate) opposed the amendment. The view of the Government was that there might be cases where the local authority might be justified in maintaining for a time that there was no failure on their part. An inquiry might substantiate a different view taken by the Department. It would be a wise arrangement that the Department should be enabled in such circumstances to give the defaulting body time to put the matter right.

The amendment to the amendment was rejected by 196 votes to 86.

On Clause 26 (the county medical officer of health and the sanitary inspector to act for small burghs),

Mr. W. ADAMSON moved an amendment to provide for the continuance of

Whole-time Sanitary Inspectors for Small Burghs.

He said if the control of this work passed into the hands of the county councils a county council might appoint a sanitary inspector for the whole of the county. That would be a retrograde step and might have serious consequences. He knew a number of small burghs where there was plenty of work for a full-time sanitary inspector if the health of the people was to be properly attended to.

Sir R. HORNE said that he agreed that it might be a proper thing for a medical officer of health of a burgh to be the county medical officer of health also, because the latter was an appointment with wide ramifications and a medical officer employed a large number of people under his guidance to deal with questions of health in the county. But when they came to the question of sanitation in any particular district it seemed to him that they were dealing with a business which was purely local. When they considered the sanitation of a small burgh there was obviously enough work for any one man to do. He therefore thought that the question of sanitary inspection should be excluded from the clause.

Sir R. HUTCHISON, in supporting the amendment, said they were looking forward to better sanitary conditions in Scotland. The well-being of the burghs, especially the industrial burghs, depended very largely on the supervision and activity of the sanitary inspector in pointing out defects and preparing the way for improvement.

Major ELLIOT asked the Committee to consider the actual figures. Of 179 small burghs in Scotland 26 had appointed the county officer to act for them, 106 had full-time officers, and 47 had part-time sanitary inspectors. He asked hon. Members, and particularly his medical colleagues in the House, to consider the position of a sanitary inspector. That position was growing more difficult than it was a few years ago. It was becoming a more and more technical and highly skilled appointment. It was of great importance to get whole-time skilled men into these important posts. Some of the correspondence which the Board of Health had had in recent years showed that some of the smaller burghs did not by any means rise to the modern conception of good sanitation. They had done their utmost for years to raise the status of the sanitary officer and to make it clear that the position was not less important, but in some ways more important, than that of the medical officer of health. They had done their utmost to secure that the officers appointed should be holders of the sanitary inspector's certificate of the Royal Sanitary Association of Scotland. These were posts which it was much more suitable to be held by whole-time officers, but they found that in practice the

appointments had not been whole-time appointments. He urged the Committee to address itself to the important matter of public health and not to be deterred by the question of the prestige of this or that local authority. There would be no disturbance of existing appointments and nothing would happen until one of the appointments became vacant, when in the view of the Government it ought to be filled by a man of high qualifications who would devote his whole time to the work.

Mr. JOHNSTON said the Under Secretary continually proceeded on the assumption that the initiation, control, and administration of public health in the small burghs was not so efficient as in the counties. Where did he get warrant for that? It was not in the public health statistics nor in the death-rate. They had a lower infantile mortality in the small burghs than in the counties. It was only when they got to the higher ages that there was a lower death-rate in the counties; yet the counties ought to be healthier than the burghs. He had spent many years on all forms of local government in Scotland, and he believed that the step proposed in the Bill was a retrograde one in regard to public health. He would give one illustration. Two years ago in many parts of the country the control of milk and dairies was taken away from the small burghs and handed over to the counties. When the burghs did the work inspections were held at least four times a year. Now under the county councils at most inspection took place twice and in some places only once a year.

Captain FANSHAWE supported the amendment. For the present at any rate they should leave the sanitary inspectors of the small burghs under the entire control of those people who had been elected to look after the affairs of those burghs.

Mr. WATSON (Lord Advocate) said that the desire of the Government was entirely for the improvement of the health of the people and of the sanitary administration of these districts. They did not wish to throw any aspersion on the many admirable instances of burghs which were working satisfactorily at present. He was perfectly willing if the amendment was not pressed at this stage to reconsider the question in the light of the debate which had taken place.

Dr. DRUMMOND SHIELS said that the form of the amendment showed that it was not put forward in any obstructive way. The question of the appointment of the medical officers of health had not been traversed at all, although they realised that many burghs in Scotland would be reluctant to depart from the system of having their own medical officers and undoubtedly many of those officers had done and were doing excellent work. Undoubtedly it was the modern trend in public health to have larger administrative areas for the medical officers of health. But as regarded sanitary inspectors the position was quite different. He agreed with Major Elliot that a sanitary inspector with a multiplicity of posts was not desirable. In some of the smaller burghs where that was the position no doubt the work could be more suitably done by the county officer. On the other hand, it was ridiculous to say that other burghs had not sufficient work to occupy a full-time and highly-qualified officer. He suggested that in reconsidering the matter the Government should take into account the question of whether at least burghs with a population of 10,000 and over should not be allowed to retain the privilege which they now had of appointing their own official to look after their own sanitary requirements.

Mr. W. GRAHAM suggested that the Government would do much better to agree to the amendment and not leave the matter to be discussed on the Report stage which might under the operation of the guillotine resolution be impossible.

Mr. WATSON said that the Government were willing not to oppose the amendment at this stage on the understanding that there would be no breach of faith if it was found necessary to reverse the decision later on.

The amendment was agreed to on this understanding.

Freedom of Choice.

Sir R. HAMILTON moved the first of two amendments which were designed to leave freedom of choice to the burgh in the appointment of a medical officer of health.

Major ELLIOT said that the majority of Members on both sides of the House were agreed that these appointments should follow the course laid down in the clause. It was following out the practice of tradition and the development of public health work in Scotland. It had been done in over 100 cases. It would be an unworkable and retrograde step to accept the amendment.

Dr. SHIELS said that he regretted that he could not support the amendment as he sympathised a good deal with the enthusiasm and the spirit which was expressed by those who supported it. The amendment, however, was not practicable and would not work. If a medical officer was appointed for a county and individual burghs were to have a right to refuse his services and to make another appointment the very greatest difficulties would arise. The burghs which objected might not be the most suitable ones to have a medical officer of their own. They saw with regret the passing of the medical officer of health of the smaller burghs because he had been a local figure of great importance and interest, and in many cases these men had done magnificent work. But they must face the fact that, with the advance of medical science, in order to deal properly with public health matters they must have such laboratory and scientific equipment as the small unit was really unable to furnish. In the interests of the people themselves in the smaller burghs it was important that they should have available the very latest resources of science in medicine and the full equipment associated with these. The Board of Health in Scotland had always in medical matters been up to date and progressive. They would not, he was sure, be averse from taking advantage of the reservation in the clause allowing for a burgh medical officer of health where it was appropriate that a burgh should have a medical officer of its own.

The amendment was rejected by 233 to 43.

On Thursday, Feb. 21st, the House again went into Committee on the Bill with Mr. HOPE in the chair.

Discontinuance of Grants.

On Clause 37 Mr. E. BROWN moved an amendment with the object of excluding from the operation of the block grant system the health services and road grants. He said that there was no single issue raised in the Bill which was raising more disquietude in the country than the change over as regarded health services to the block system. He proposed to leave out from the block system the maternity and child welfare grant for Scotland, amounting to £157,000, the grant for tubercular treatment, amounting to £347,000, the grant for venereal disease treatment, amounting to £66,000, the grant for the welfare of the blind, amounting to £20,000, and the mental deficiency grant of £76,000, making a total of £667,000 with the road grant amounting to £280,000. The Government had already decided that the Government's plan for merging all the public health services under one control in order that they might obtain team work against disease or in maternity would be hampered by the application of the block system to those services. The Government would find that it would be hard to shake that view. The proposal of the Government was that in place of the percentage arrangement previously in operation there should be a fixed sum to be included in the general grant. That sum would have no relation to the actual expenditure on any one of these particular services. Further, that sum would be fixed once and for all on the moneys expended in the standard year. That was one of the worst elements in the proposal. Let them put it as high as they could and grant that this was a great idealistic conception—which he believed it was—in order more fully to organise the medical services and enable more whole-time medical officers of health to be appointed because of the wider area and the greater concentration of the services. How foolish it was then to risk the efficiency of their new organisation by departing from the system of grants which by general consent had worked in the direction of increasing and developing the services. The worst effect of the application of the new system would be that, so far from drawing together all those who were in favour of the expansion of the health services as a band of brothers who desired to help each other in the great work of preventive medicine, it would set up a competition among idealists which would mean that one would want more money for tuberculosis treatment, another for maternity and child welfare, and another for the treatment of venereal disease, and it would leave local authorities with a very grave burden, or change of burdens, and with the temptation that these moneys might be used for other local needs. He believed that such a system would hamstring the Government's own scheme for the concentration and better working of the medical services.

Major ELLIOT said that Mr. Brown had undoubtedly raised one of the major issues of the whole Bill. It was not a party issue, but was one which would confront governments of successive complexions for many years to come. Fiscal problems were undoubtedly going to be more and more important as time went on. The system of assigned revenues had been tried and had obviously broken down because of the delocalisation of finance. In the modern industrial State with the local revenues derived from no one particular place it was no longer possible to apply that system. They all agreed that the Exchequer, the great financial engine of the State, must be brought into play to raise a great portion of the revenues which the local authorities were to expend. The scheme of the Government in this instance was not a stereotyped grant, but was subject to the revision of experience. They had adopted the method of a grant based first of all on compensation; secondly a weighted population, a very important factor; thirdly a permanent increase in the rateable value for every

area in the country and in addition a substantial sum of new money. Further than that there was a guarantee of an increase in successive periods if and when local expenditure increased. This sum was now to be revised in a three-year period. Mr. Brown could not seriously ask them to believe that within a three-year period not only would the whole of the new money have been eaten up, but that the local authorities would be pushed so far against their financial limitations that it would cramp and cripple the new social services which they were anxious to expand. He claimed that the Government's proposal in regard to the health services was reasonable for this reason. The principle of percentage grants had worked in many cases satisfactorily, but in other cases it had not done so. There were large areas to-day which had no child welfare schemes at all. The Central Department had no power at present to enforce schemes and the local authorities had no money with which to put schemes into operation. The Highland counties would receive a sum of over £80,000 a year under this proposal and the Government would have power to call for the institution of such services. The scheme provided the cash and the necessary compulsion, but he did not believe that compulsion would be necessary. Local authorities in the past had not hesitated to develop their health services under the poor-law, even though those services were not attracting Government grants. From his experience he had learned that the long-continued and developed health policies of the great health authorities were not deflected one way or the other by the casual offer or even the continuing offer of a percentage grant. They depended on far more stable and permanent things—on the health conscience of the community, on the will of the electorate, on the enlightened health administration of the local authorities, and those authorities ought to be left as free as possible vis-à-vis the central authority. The central authority should do its utmost, as would be the case under this Bill, to see that the local authority covered a sufficient area and had sufficient resources to plan and develop such policies. In the past they had found this problem a most difficult and intractable one. He did not pretend that this solution was perfect, or that it would not need to be revised, but he contended that it laid down broad general lines upon which national and local development could take place.

Mr. W. GRAHAM said that no Royal Commission or other body which had examined this problem had recommended the scheme which the Government now proposed to apply to Scotland. If they were in fact providing for expansion in vital public health services why not leave the percentage grant system alone? It would give true expansion and they could make it more efficient. If the Government passed this clause in the years ahead it would be revised, altered, and probably abolished.

Mr. JAMES STEWART said he hoped that even at this late hour the Government would consider doing away with the block grant so far as maternity and child welfare was concerned.

Dr. SHIELS said that a very simple test in this matter was to ask whether the first impulse for a change came from the medical authorities in the public service or from the finance department of the public service. He thought that no medical authority would have pleaded for a change from the percentage to the block grant system. The change in the system with regard to public health had quite obviously been made because those services were the fast developing services. In many cases they had doubled and trebled in amount since they were instituted. The harm that would be done by the block system had no doubt been modified by the substitution of three years for five years as the period before the first revision. That would enable adjustments to be made, but even that modification had only been granted after very strong pressure by the local authorities. He was particularly interested in maternity and child welfare, and there was a very special case for those services being favourably considered. Very great and general public interest had been aroused in the question of maternal mortality. It was not easy to allocate the causes of that mortality, but one thing had been definitely settled, and that was that antenatal supervision of the mother did very definitely lessen the maternal death-rate. An adequate antenatal service in every centre of population was absolutely necessary. In Edinburgh, Glasgow, and other cities there was a fairly good service, but even in those centres the number was not sufficient, while the accommodation and comfort of them was very far from being what it should be. In other places things were worse. He wanted these places to be such that women would go willingly to receive the treatment and attention that would mean so much to them at a later date. The last few years had been economy years in the public health committees of the town and county councils of Scotland. In Edinburgh they had been contemplating a scheme for debilitated children which was to cost about £25,000. He understood that it was very uncertain now whether that would go on, because obviously this last had been the standard year, and any expenditure over and above that standard year for the next three years would fall on the ratepayers. The new money was not likely to be nearly adequate to meet the developments that would normally have taken place under the percentage system. Though tuberculosis was not assuming the proportions which it once did it was still a very serious scourge, and there were by no means too many beds available in Scotland for patients. There were in the slums and tenements far too many consumptive people who were a danger not only to themselves, but to the whole community. The treatment of venereal disease was specially endangered under this block grant. It was an unpopular service and one which got previously 75 per cent. from the State instead of 50 per cent. Therefore the local authorities would now have to find 100 per cent. instead of only 25 per cent. The blind were at present a very neglected section of the community. They were fearful, and he thought rightly so, that under this new arrangement they would have rather cursory treatment from some of the local authorities. The mental defectives service was one in regard to which they needed a very great advance. Anything based on the standard year would be obviously inadequate. It seemed to him that they had never yet realised the stupidity of educating these defective children up to the age of 16 and then throwing them out into the world a danger to themselves and to the community just at a time when they need most attention. He felt that on the basis of the standard year any advance in the treatment of mental defectives was unlikely to accrue. There was no place in Scotland where the health services, however good they were, were completely adequate to the needs of the community. The public conscience was more alive than it used to be in regard to health matters, and there was not only a great need, but also a great demand for these public health services which ought to go on and develop. It seemed to him that the argument of Major Elliot that the poor-law health system, in spite of lack of grants, had developed to a high state of efficiency, was not one that could be justified looking at Scotland generally. If the Government were really unable to accept this amendment he pleaded very strongly that at least they should make one exception and remove the maternity and child welfare services from the operation of the block grant.

After further debate,

The amendment was negatived by 174 votes to 102.

Dr. SHIELS moved an amendment to exempt maternity and child welfare from the clause.

The amendment was negatived by 181 votes to 106.

On Friday, Feb. 22nd, the House again went into Committee on the Bill. Mr. D. HERBERT was in the chair.

Contributions to Voluntary Associations in Respect of the Welfare of the Blind and Mental Defectives.

On Clause 48 Dr. SHIELS moved the following new subsection:—

"The Central Department may, before the beginning of each fixed grant period, make a scheme providing for the payment by county councils and town councils of large burghs specified in the scheme of such amount as may be specified in the scheme to the central council or committee of an approved organisation which provides services in the nature of general publicity, and educational propaganda in furtherance of the prevention and treatment of venereal diseases."

He said that the amendment was to add to the possible schemes already indicated in the clause one in regard to venereal disease. Those who were interested in public health were a little apprehensive as to the effect of this Bill on many health services and specially venereal disease. The proposal to drop the grants which had previously been given for propaganda was very unwise. Last year the House decided that the voluntary system was sufficient. His own feeling was that a purely voluntary system would not be effective in stamping out the disease, but however that might be, all who understood the subject were agreed that the voluntary system could not succeed unless the public generally understood and realised the seriousness of these conditions. A great deal of the work in hospitals was really in origin related to this subject. A similar amendment was put forward in connexion with the English Bill, but the Minister of Health did not find himself able to accept it. A very important alteration had been made in the present amendment by substituting the word "may" for the word "shall." It would now be within the discretion of the Minister to make such a scheme if the attendance at the clinics or the number of defaulters was such as to make it in his opinion desirable. A committee in Scotland had been carrying on this propaganda since 1921. It was a committee of the British Social Hygiene Council. The committee had been carrying on very important work by lectures, advertising and distributing literature, particularly in those areas where there had been a lack of interest and where cases were not coming forward to the clinics. The

Scottish Board of Health had been in the habit of giving a grant of £1000 a year for the work, and in view of the statements that were sometimes made as to the value or otherwise of propaganda he would quote the following passage from the Report of the Scottish Board of Health for 1927:—

"Propagandist and Educational work.—The former of these provisions the Board has left in the hands of the Scottish Committee of the British Social Hygiene Council, being well assured that that body could and would do the work as well as it was possible for it to be done, and content, therefore, to stand by approvingly and render the necessary financial aid. That the work of the Scottish Committee has been effective and of high value is certain, but we learn from time to time with some surprise that information regarding these ailments, their nature and treatment, and regarding the existence of clinics where efficient and confidential treatment is available without charge to all, and, at least to the great majority of city and town dwellers, reasonably acceptable—that this information, actively disseminated as it has been for six or seven years, has not as yet by any means found its way to the whole of the population. At the male venereal disease clinics it is no uncommon experience to hear, in answer to the medical officer's question, 'Why did you not come here sooner?' the remarkable reply, 'I did not know that there was such a place.' In the female clinics such an assertion of ignorance is still more frequent; and at the latter, in addition, there is often revealed an almost incredible ignorance with regard to the manifestations of one or other of the maladies in question, or even as to the nature and significance of general indications of ill-health."

He felt that this work was national and should be done by a national department, but as the Government were not likely to agree to that he suggested that this voluntary body composed of many able and well-informed people which had been doing such effective work should be allowed to carry on, or else that some similar body should have the task of enlightening the public as to the great importance of these diseases. Those who were in charge of the treatment of venereal disease in Scotland were satisfied that if things were left as they were in the Bill local authorities would not voluntarily contribute to the funds of such an association. He hoped, therefore, that the Government would consent, especially having regard to the optional nature of the amendment, to ensure a continuance of the system which had secured at least an effective method of disseminating information regarding these diseases throughout Scotland.

Major ELLIOT said that he had done his best to address himself to the amendment from a non-party point of view, because there was undoubtedly much to be said for the arguments which had been advanced that the propaganda with regard to this disease was of vital importance and that in many ways it was better exercised from a central than from a local body. There were, he thought, conclusive difficulties against adopting the course of compelling local authorities to contribute towards the funds of voluntary associations. But the very fact that local authorities had sympathetically approached himself and other members showed that there was a feeling of full responsibility among health authorities as to their duties in connexion with propaganda work. There was a great danger in specialising one or two activities or a group of activities concerning which the local authorities must make payments. He thought that the matter would be much more readily met by a method which he would propose to the Committee. It was that in the first place the present grant from the central authority to this voluntary society should be continued. That would run up to May, 1930. He was prepared to recommend that a substantial additional sum should also be obtained from the Treasury—and he did not doubt that he would be able to obtain it—towards the expenses of this voluntary society. That would give a considerable time for those concerned to look round. He was also prepared to say that he would call a meeting of the local authorities particularly concerned in the matter and discuss the subject frankly with them. He had no doubt that they would be able to come to an agreement with the local authorities as to the health propaganda work which they desired to carry on. He did not desire to impose on the central department further powers to compel local authorities by fiat to expend sums out of money which they rightly regarded as their own money and their own responsibility. The position of the society would be safeguarded for this year and during that time the local authorities would have considered the position in regard to health propaganda and publicity.

After further debate,

Major ELLIOT said that he would undertake to convey the views expressed by hon. Members to the Secretary of State for Scotland, but he could give no pledge. He would discuss with his right hon. friend the general question of health propaganda. It must be clearly understood that they were not suggesting any payment or guarantee of payment to any single voluntary organisation or in respect to any particular disease barring the additional sum which he had already mentioned—namely, the sum in consideration of the change in the operation of the grant which was now taking place.

Dr. SHIELS said that he thought they could discern in Major Elliot's speech at any rate a sympathy with the objects of the amendment. He would therefore ask leave to withdraw his amendment.

The amendment was by leave withdrawn.

On Monday, Feb. 25th, the House again went into Committee on the Bill, with Mr. DENNIS HERBERT in the chair.

Reorganisation Schemes.

Mr. MACROBERT (Solicitor-General for Scotland) moved a new clause to enable local authorities to submit schemes for reorganisation with a view of removing the distinctions between poor-law patients and the public health patients, and to provide for hospital treatment under the public health authorities and not under the poor-law. He said that in the clause there were safeguards with regard to the voluntary hospitals, and one of the objects of the clause was to secure coöperation between the public authorities, the voluntary hospitals, and the medical schools. The schemes for reorganisation had to be submitted to the Secretary of State for Scotland by the various authorities, either county council or borough council. A wider definition was given of the words "hospital facilities." Power was given to the authorities to spend money in extensions where the present facilities were inadequate. The department would satisfy itself with regard to an appropriate scheme by inquiry, not necessarily by a formal or local inquiry. In the event of a scheme not being approved in terms by the department they might modify or amend it. Statutory powers were given to the authorities in connexion with general hospital services. At present they only had statutory powers in regard to hospitals for infectious diseases. The statutory powers were to extend to general hospital facilities in the same way that they now extended to the infectious diseases hospitals. Authorities were given power to give hospital services for people living in another area.

Mr. STEWART urged that it should be made obligatory on every county council and town council to prepare a scheme for the consideration of the central department.

Lieut.-Colonel MOORE said he represented some of the most progressive seaside towns in Scotland. In the arrangements made for a very large summer population hospital accommodation was very prominent. In certain cases the town councils had established very fine hospitals for fever and other cases and out of the rates they had practically paid off the entire capital cost incurred in building and equipping the hospitals. Under this new clause these hospitals would be taken over by the new county authorities and as far as he could see no question of compensation arose.

The CHAIRMAN pointed out that Colonel Moore could not raise that question at that point, as it came under Clause 6.

Colonel MOORE said that in that case he would ask the Government to bear in mind that there was a feeling that these towns should be compensated for the capital expenditure which they had incurred in respect of their hospitals.

The Labour View.

Dr. SHIELS said that the Labour Party agreed with the main principles of the clause, but there were certain features which they would like to see altered. In the larger industrial districts in Scotland and England hospital arrangements were in a more or less chaotic condition. Reorganisation in these cases was absolutely essential if the full facilities available in the public and voluntary hospitals were to be utilised. If the clause was to be permissive they would still be left in the same old position with regard to reactionary or lazy authorities. One of the hopeful features of the section dealing with the extension of hospital facilities was that it provided some remedy for the serious condition of the voluntary hospitals as regarded their accommodation. The Mackenzie Commission which reported in December, 1925, gave the total number of voluntary hospital beds in Scotland as 8589. There had probably been an increase since that time, but they estimated that 3600 additional beds were immediately needed in order to provide the necessary accommodation. The Edinburgh Royal Infirmary had a waiting list of over 2000 people, many of them being surgical and medical cases, including cancer cases. The same was true in regard to Glasgow, and indeed the voluntary hospitals of Scotland did not provide except very partially for the needs of the community. In the poor-law hospitals and sick wards of poor houses there were 6100 beds. Of that number 4285 were grouped in the larger poor-law hospitals. One effect of this new clause would be that in those cases where the poor-law beds were not fully occupied they would be available to the local authority to meet the needs of the sick people in the district. It was surely even more necessary that immediate steps should be taken, seeing that there were these facilities, to prepare a scheme, not only for coördination, but for making the necessary additions and extensions in areas which quite evidently required it. In regard to the inquiry mentioned by the Solicitor-General

he wished to know whether it was to be a public inquiry with witnesses; whether it was likely to be expensive, with counsel representing the various conflicting authorities; and whether people with vested interests would be able to object to the necessary extensions and either defeat the object of the local authority or add considerably to its expenses in establishing approval of the proposed scheme.

After further debate,

The Lord Advocate's Reply.

The LORD ADVOCATE said that the Government felt that it would be a bit hard and unwise to make the preparation of schemes mandatory in the way which had been suggested. But he would point out that under Clause 50 every local authority was bound to exercise its functions up to a certain standard and to provide adequately for the health of the people in the district. The word "function" was defined as including not only duties, but powers, and as a lawyer he said that the power which was conferred on local authorities in this clause was one which they would be bound to exercise; otherwise their grant would be reduced.

The clause was read a second time and added to the Bill.

Recovery of Expenses for Treatment of the Sick.

The LORD ADVOCATE moved a new clause dealing with the recovery of expenses in connexion with the treatment of the sick. He said that at present the poor-law authority had power to recover expenses for the treatment of poor persons from those who were legally liable for the maintenance of those persons, and it was now proposed that all the hospitals under the new sick persons scheme should be put more or less on the same basis. The poor-law power, of course, would remain with the new body. There was an exception in the case of infectious disease and the reason for that was obvious. According to the customary practice infectious patients were compulsorily removed for the benefit of the community at large, and that made all the difference. The amount to be recovered was limited to a reasonable amount.

Dr. SHIELS said that he was glad that the Government had now amended this clause in accordance with suggestions made by the Opposition and to that extent he thought it was a great improvement on the original drafting. The use of the word "reasonable" was a great improvement. But he protested against the distinction still drawn between infectious and other diseases. He would like to say something about the maternity hospitals. A great deal was being done in regard to the reduction of maternal mortality, and one proposal which seemed likely to be fruitful was that instead of one big maternity hospital there should be a number of smaller hospitals in different parts of the town or the county where patients could be more readily and quickly attended and where a certain amount of isolation could be secured in cases where there was an infective condition. There was great scope for this development, because they knew that diseases associated with these conditions were responsible not only for many deaths, but for a great deal of chronic ill-health. They wanted to encourage the most ample provision for maternity hospitals. Yet in spite of the optional nature of this clause, and in spite of the insertion of the word "reasonable," it was still possible under it that a maternity hospital would have charges so high that women who required the treatment very badly would not be able to take advantage of its facilities. Therefore he urged the Lord Advocate very strongly to concede the exemption of maternity hospitals from the general operation of the clause.

After further debate,

The clause was read a second time and added to the Bill.

An amendment moved by Dr. SHIELS, to exempt maternity homes from the clause, was rejected by 203 votes to 88.

The Committee stage was completed, and the Bill as amended was reported to the House.

HOSPITALS AND RELIEF OF RATING.

On Wednesday, Feb. 20th, Colonel GRETTON presented the Hospitals (Relief from Rating) Bill, a measure designed to grant complete or partial relief from rates in the case of certain hereditaments used for the purpose of hospitals, infirmaries, dispensaries, convalescent homes, nursing homes, sanatoria, and other similar uses or in connexion therewith. The Bill was read a first time.

HOUSE OF COMMONS.

WEDNESDAY, FEB. 20TH.

Rating of Voluntary Hospitals.

Mr. ROBERT MORRISON asked the Prime Minister, in view of the increased burden of rates thrown upon the voluntary hospitals by the Rating and Valuation Act, 1925, whether the Government would introduce a Bill during the present session to remedy this, upon an assurance by all parties in the House that such a measure would be regarded as non-controversial.—Sir KINGSLEY WOOD replied: The Rating and Valuation Act made no alteration in the basis of the valuation of hospitals. It is open to the assessment authorities now, as heretofore, to adopt a basis which will take full account of the special circumstances of voluntary hospitals dependent upon contributions from the public and of the responsibilities, conditions, and restrictions which affect their rateable value. Full rights of objection and appeal are available to any governing body which is not satisfied that due regard has been paid to these factors and is aggrieved by the assessment proposed. As I indicated recently, the complete or partial exemption of hospitals from rating by statutory enactment could not be considered apart from the claims of other charitable and public institutions, and the introduction of legislation to that end could not be undertaken in the life of the present Parliament. I understand, however, that the British Hospitals Association are proposing to submit to the Central Valuation Committee proposals for promoting greater uniformity in the assessment of voluntary hospitals and the adoption of a generally acceptable basis of valuation.

THURSDAY, FEB. 21ST.

Workmen's Compensation.

Mr. TINKER asked the Home Secretary if he was in a position to give the total amount of compensation paid under the Workmen's Compensation Act for 1927, and the number of fatal and non-fatal cases that it covered.—Sir W. JOYNSON-HICKS replied: The total compensation paid in the year 1927 (the latest year for which figures are published) in the seven great industrial groups for which returns are collected was £5,315,803; the number of fatal cases was 2567 and the number of non-fatal cases 155,852. I regret that no corresponding figures are available for the other industries under the Act, but an estimate of the total amount paid in these industries in respect of workmen's compensation for 1927 is given on page 8 of the statistics.

Committee on Mental Deficiency.

Mr. ROBERT MORRISON asked the President of the Board of Education whether he had now decided to publish the report of the Departmental Committee upon Mental Deficiency, and when it would be available.—Lord E. PERCY replied: I am arranging for the publication of the first section of the report, which will include all the Committee's findings and recommendations on matters falling within the scope of my department and the local education authorities, together with the report of a survey of the incidence of mental deficiency in certain typical areas which was carried out for the committee by one of the medical officers of the Board of Control. These documents are not yet in print, and in view of their length I am afraid that they will not be available before Easter. I should like to take this opportunity of thanking the Committee for a most valuable report which I believe will be of the greatest assistance to all those interested in the education of mentally deficient children.

Sick Leave among Welsh Women Civil Servants.

Mr. SNELL asked the Minister of Health what was the average number of days of sick leave per head taken in each of the last three years by women clerical officers, writing assistants, and members of the established typing grades, respectively; and what was the number of days of sick leave taken in the case of each of the grades concerned on account of gastric and nervous troubles, respectively, in the Welsh Board of Health and in the office of the Registrar-General for England.—Mr. CHAMBERLAIN replied: The following is the information asked for: The average numbers of days sick leave per head taken in each of the last three years by women clerical officers, writing assistants, and members of the established typing grades in the Welsh Board of Health (A) and in the office of the Registrar-General for England (B), respectively, were as follows:—

	(A)			(B)		
	1926.	1927.	1928.	1926.	1927.	1928.
Women clerical officers.	6·83	5·75	4·72	10·0	6·7	17·5
Writing assistants ..	5.43	8·82	10·47	11·8	18·8	16·7
Established typing staff	3·25	8·3	10·25	16·5	21·6	18·5

The information asked for in the last part of the question could not be obtained without the expenditure of an undue amount of time and labour.

Removal of a Typhoid Patient.

Mr. SHIELDS asked the Minister of Health whether he was aware that Mrs. George Cromarty, of Sydney Cottage, Holy Island, Northumberland, on Oct. 20th, 1928, suffering from typhoid fever, was ordered by the medical officer to rise from her bed and dress and then conveyed in an ordinary four-wheeled cab to the mainland three miles over the sands, the tide being up and the cab awash all the way, and the patient being in a sitting position during the journey; that the order for removal was given by the

medical officer without medical examination of the patient and against the advice of the local practitioner; that Mrs. Cromarty died within a few minutes of being transferred to the ambulance which was waiting; that, had the removal been delayed for a few hours, the ambulance car could have carried out the removal from the island, and that provision for isolation on the island could have been arranged; and would he cause a full inquiry into the circumstances of Mrs. Cromarty's death.—Mr. CHAMBERLAIN replied: This case has not previously been brought to my notice, but I am causing inquiries to be made of the local authority, and will communicate the result to the hon. Member.

Duty on Radium Compounds.

Mr. WEDGWOOD BENN asked the Secretary to the Treasury the total duty collected, since its imposition, on radium compounds, and whether he had any information as to the amount of radium and radium compounds at present in this country.—Mr. A. M. SAMUEL replied: From Oct. 1st, 1921, to Jan. 14th, 1927, duty was chargeable on the following radium compounds only—viz.: radium bromide and radium barium chloride. The duty recorded as collected on these substances from Jan. 1st, 1922, to Jan. 14th, 1927, was £6. The figures for Oct. 1st, 1921, to Dec. 31st, 1921, are not available. From Jan. 15th, 1927, duty became chargeable on all radium compounds, and the amount of duty recorded as collected for the period Jan. 15th, 1927, to May 14th, 1928, when the duty was suspended, was £80. As regards the second part of the question, I would refer the hon. member to the reply given on Jan. 24th by the Minister of Health. I have no further information on the point.

MONDAY, FEB. 25TH.

Colonial Surgical Appointments.

Dr. SHIELS asked the Secretary of State for the Colonies if he was aware that in one colony certain surgical appointments were reserved for holders of the fellowship of a particular Royal College of Surgeons; whether this practice had the approval of the Colonial Office; and, if not, whether he would call the attention of the Colonial Government in question to the matter.—Mr. AMERY replied: I have been informed that in one of the colonies there is a departmental regulation that has the effect of excluding from consideration for certain surgical appointments candidates other than holders of a particular surgical diploma. I do not think that assignment to particular technical posts can fairly be based on academic qualifications alone, to the exclusion of other qualifications such as experience, skill, and personal suitability. I am inviting the attention of the Colonial Government concerned to the question.

Poisons and Pharmacy Acts Committee.

Sir WILFRID SUGDEN asked the Minister of Health when the Report of the Inter-Departmental Committee on the Poisons and Pharmacy Acts would be available, as its findings were essential to certain improvements in the interests of public convenience and health matters generally.—Lieut.-Colonel Sir V. HENDERSON (Under-Secretary to the Home Office) replied: I understand that the chairman of the Committee expects that the Committee's report will be submitted to the Lord President of the Council in the spring or early summer.

Rickets in Distressed Mining Areas.

Dr. VERNON DAVIES asked the Minister of Health what steps he was taking to deal with cases of early rickets in the distressed mining areas of South Wales and Monmouthshire, and if he was satisfied that these measures were adequate for all possible needs in the near future.—Sir KINGSLEY WOOD replied: The measures taken to prevent the onset of rickets and to deal with such cases as arise are a matter in the first instance for the maternity and child welfare authorities of these areas. My right hon. friend is advised that the authorities are alive to the importance of this matter, and he has recently sanctioned increased expenditure on the supply of milk to expectant and nursing mothers and young children in these areas.

Mr. PETHICK-LAWRENCE asked whether the cost of this milk was deducted by the guardians from the amount of relief given to the families

Sir KINGSLEY WOOD: No; there has been no deduction in these areas.

Dr. VERNON DAVIES asked whether the right hon. gentleman would communicate with the health authorities in order to see that cases of rickets were followed up after treatment.

Sir KINGSLEY WOOD said that he would look into that.

Mr. T. WILLIAMS asked if the right hon. gentleman was not aware that in the report submitted to the South Wales Mining Association it was definitely stated that the appointed commissioners were responsible for the reduction in the amount of grants for poor-law relief, and that that had contributed to a large number of cases of rickets.

Sir KINGSLEY WOOD said he was not aware of that report.

Mr. PETHICK-LAWRENCE: Is the right hon. gentleman not aware that I myself in this area was informed by the guardians that they had cut down the amount of relief to families where milk was given to the children.

Sir KINGSLEY WOOD: I cannot understand that, because there was no reduction made in the estimates in regard to milk in the distressed areas.

Miss WILKINSON asked whether the question was not whether the Department made a reduction, but whether it was a fact that the commissioners in the area and the poor-law authorities had deducted from the relief given to the families the cost of the milk given to the mothers.

Sir KINGSLEY WOOD: No; I am not aware of that, and there have certainly not been any instructions given by my Department to that effect.

Mr. SOMERVILLE asked whether far more relief was not being given now than in 1924.

Dr. VERNON DAVIES: Is the right hon. gentleman aware that this is not simply a question of shortage of food, but of improper food that the children are having?

Sir KINGSLEY WOOD: Yes, and I would remind the House that in the report just issued it was stated that to a great extent disease has been controlled by means of maternity and child welfare services.

Hygiene on Mercantile Vessels.

Dr. VERNON DAVIES asked the President of the Board of Trade if he was aware that during the years 1917 and 1918 certain amenities with regard to the hygiene of crews' spaces were enforced in standard ships; and whether these same amenities were still enforced by the Board of Trade.—Mr. H. G. WILLIAMS (Parliamentary Secretary to the Board of Trade) replied: The crew space arrangements on standard ships during the war were to some extent in excess of the regulation requirements of that time, and the present improved requirements are frequently exceeded on ships built now.

Dental Benefit in Scotland.

Mr. JOHNSTON asked the Secretary for Scotland whether he could say if insured persons in Scotland had a choice of dentist when receiving dental benefit; and, if so, under which clause or regulation.—The LORD ADVOCATE (Mr. W. WATSON) replied: Under para. 4 of Schedule C of the Scheme of Additional Benefits of an approved society providing dental benefit, an insured member is entitled to obtain dental treatment from any registered dentist who is willing to provide the treatment in accordance with the terms of the schedule and on the scale of fees, if any, for the time being recognised by the Committee of Management of the society. Where, however, the work or conduct of a dentist has been declared to be unsatisfactory a society may notify their members that that dentist is excluded from giving treatment under the schedule.

TUESDAY, FEB. 26TH.

Medical Practitioners and Mobilisation.

Mr. MALONE asked the Secretary of State for War whether he was aware that circular letters were being addressed by the district military headquarters to medical practitioners in the district requesting the practitioners to fill in a form stating whether, in the event of mobilisation, they would be willing to devote a portion of their time to work in the local military hospitals in order to fill the vacancies created by the withdrawal of regular Royal Army Medical Corps officers for the expeditionary force; whether this registration of doctors for military purposes was being carried out all over the country on his instructions; and, if so, with what object.—Sir L. WORTHINGTON-EVANS replied: Inquiries are being made by the military authorities in various parts of the country to see how far the local civil medical practitioners can be counted on in the event of mobilisation to act in a civil capacity in hospitals in the United Kingdom in place of Royal Army Medical Corps officers until relieved by other Royal Army Medical Corps officers.

Pensioners and Treatment Allowances.

Mr. BELLAMY asked the Minister of Pensions, seeing that great hardship was inflicted on the families of men undergoing treatment in cases where allowances were not payable, several persons, women and children, having to live on a flat-rate pension of 8s. a week in some instances, and that a pensioner undergoing institutional treatment could not accept or follow a remunerative employment, if he would authorise the payment of full treatment allowances in all cases of institutional treatment whether the pensioner was in employment or not when admitted.—Lieut.-Colonel STANLEY replied: Special allowances during treatment are, as my right hon. friend has more than once explained, payable only where the man has incurred loss by having to give up a remunerative occupation in consequence of the treatment; and allowances are nevertheless paid (both in

the case of in-patient and other forms of treatment) where the man is proved to be ordinarily an earner, notwithstanding that he may have been temporarily out of employment at the time of commencing treatment. There would be no justification for the payment of these special allowances in cases where there is no evidence to indicate that, apart from the course of treatment, the men would be engaged in remunerative occupation, and their ability to provide for themselves and their families is therefore not adversely affected by their treatment.

Medical News.

UNIVERSITY OF OXFORD.—In Convocation on Feb. 26th a decree was passed to discontinue the examinations for the Diploma of Public Health until further notice.

SOCIETY OF APOTHECARIES OF LONDON.—At recent examinations the following candidates were successful in the undermentioned subjects:—

Surgery.—T. A. Barnabas, Bristol; C. M. Brooks, Durham; N. Das, London Hosp.; H. W. E. Dickey, Manchester; R. Frankling, Guy's Hosp., K. E. Gallaher, Manchester; and K. Girgis (Section I.), Manchester and Charing Cross Hosp.

Medicine.—W. A. A. Collington, Guy's Hosp.; H. M. Feldman, Leeds; L. P. Gregory, Bristol; C. K. McCoan, St. Mary's Hosp.; and C. F. C. White, Guy's Hosp.

Forensic Medicine.—C. W. Ellison, St. Bart's. Hosp.

Midwifery.—R. K. Nandlal, Birmingham, and C. Skinner, Guy's Hosp.

The Diploma of the Society was granted to the following, entitling them to practise medicine, surgery, and midwifery:—T. A. Barnabas, C. M. Brooks, W. A. A. Collington, N. Das, L. P. Gregory, C. K. McCoan, and C. F. C. White.

UNIVERSITY OF LONDON.—At a meeting of the Senate on Feb. 20th an offer by the trustees of the late Mr. C. H. Clark of a sum of £10,000 for the establishment of a Lectureship in the History and Progress of Preventive Medicine and Tropical Hygiene was accepted with thanks.

The Senate also accepted with thanks a grant of £1000 from the Beaverbrook Fund for Medical Research, which had been forwarded by the Prime Minister. The grant will be applied to the purposes of, and administered under, the scheme for the Thomas Smythe Hughes Medical Research Fund.

Prof. W. E. Le Gros Clark, F.R.C.S., was appointed as from Sept. 1st, 1929, to the University Chair of Anatomy tenable at St. Thomas's Hospital Medical School. In 1924 Prof. Le Gros Clark was appointed to the University Readership in Anatomy tenable at St. Bartholomew's Hospital Medical College and in 1927 to the University Chair of Anatomy there.

Mr. T. G. Hill, D.Sc., was appointed to the University Chair of Plant Physiology and Mr. E. J. Salisbury, D.Sc., to the Quain Chair of Botany, both tenable at University College.

A degree of Ph.D. was instituted in non-clinical subjects for both internal and external students in the Faculty of Medicine.

The Geoffrey E. Duveen Travelling Studentship in Oto-Rhino-Laryngology, of the value of £450, was awarded for 1929 to Mr. Nehemiah Asherson, M.B.

On the recommendation of the School Committee of University College Hospital Medical School, Mr. G. R. Cameron, M.B., has been appointed to the Graham Scholarship in Pathology for two years from Sept. 1st, 1928.

A course of three lectures on Some Biological and Epidemiological Aspects of Helminthic Infection will be given by Prof. F. Fülleborn (of the Institut für Schiffs- und Tropenkrankheiten, Hamburg), at the London School of Hygiene and Tropical Medicine (25, Gordon-street, W.C. 1) on Monday, Tuesday, and Wednesday, March 11th, 12th, and 13th, at 5.30 P.M. At the first lecture the chair will be taken by Dr. G. Carmichael Low.

COLLEGE OF PESTOLOGY.—A luncheon was held at the Hotel Cecil on Feb. 20th, at which the chairman of the College of Pestology, Mr. A. Moore Hogarth, was presented with his portrait in oils. The President, Sir William Bull, who was in the chair, read a letter of felicitation from Sir Thomas Horder, the Deputy President, who was prevented from attending. The presentation was made by Prof. F. T. G. Hobday, and Mr. Hogarth, in reply, recounted the experience which had led him to found the College and suggested that the time had come for a change of name, possibly to the "College of Microbiology."

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE.—A course in general medicine and surgery, including the special departments, with special reference to recent advances in these subjects, will be held at the West London Hospital, Hammersmith, from March 11th to 23rd.

WEST END HOSPITAL FOR NERVOUS DISEASES.—A Savill Prize, value £15, is offered for a thesis on a neurological subject approved by the examiners before April 9th. Candidates must have attended the practice of the hospital at least ten times and theses must be received not later than Oct. 31st. Further information may be had from the Secretary of the Hospital, Welbeck-street, London, W. 1.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION.—The annual general meeting of this Association will be held at the Rooms of the Society of Medical Officers of Health, 1, Upper Montague-street, Russell-square, London, W.C., on Friday, March 15th, at 5 P.M. (tea 4.30 P.M.), when Sir Henry Gauvain will read a paper on Combined Education and Treatment of Children Suffering from Physical Defects.

COURSES FOR DIPLOMA IN PSYCHOLOGICAL MEDICINE.—Lectures and practical courses at the Maudsley Hospital, Denmark Hill, S.E. have been arranged by the London County Council, beginning on March 6th. Particulars may be had from the Director of the Central Pathological Laboratory at the hospital. There is also opportunity for clinical experience and instruction, concerning which application should be made to the Medical Superintendent.

POST-GRADUATE FACILITIES IN MANCHESTER.—The post-graduate lectures and demonstrations at Manchester Royal Infirmary have been resumed and will be held each Tuesday (except April 2nd) till May 14th. On Fridays, from March 1st, demonstrations of clinical cases and methods will be given in the wards and special departments. These will be continued (except on March 29th and April 5th) till May 10th. All the lectures and demonstrations will commence at 4.15 P.M. (tea at 3.45 P.M.). Post-graduate lectures at Ancoats Hospital are also being continued this session on certain Thursdays at 4.15 P.M. (tea at 3.45 P.M.). Notices of lectures at both hospitals will be found weekly in our Medical Diary.—A post-graduate intensive course in obstetrics and gynæcology will be given at St. Mary's Hospital, Whitworth-street, Manchester, from Saturday, June 15th, to June 22nd, inclusive. Further particulars of this and other courses can be obtained from the Dean of the Medical School at the University.

HOSPITAL ACCOMMODATION IN THE IRISH FREE STATE.—In a brief debate on this subject in the Senate last week, the MacGillicuddy of the Reeks moved that the Minister for Local Government and Public Health should exercise his powers to ensure that adequate hospital accommodation should be provided in the County Kerry at an early date. He said that the present accommodation was inadequate, and patients under treatment had to be removed prematurely to make place for others. Sir Edward Bigger urged that a wider issue should be considered. He thought that a committee should be appointed to investigate the whole question of the provision of treatment for major operations. In his reply, the Minister did not touch on the larger question, but stated that the case of Kerry was receiving full consideration.

BILLROTH CENTENARY CELEBRATIONS IN VIENNA.—Medical men and scientists from all over the world will honour the memory of the great Austrian surgeon, Theodore Billroth, in April next, in which month the hundredth anniversary of his birthday occurs. The Medical Faculty of the University of Vienna, the Vienna Academy of Science, and the Medical Society of Vienna have united to organise special centenary celebrations on April 9th and 10th in the city where Billroth practised and taught, and it is expected that the medical professions and scientific associations of many foreign countries will be represented. The idea of holding centenary celebrations originated in the small circle of those in Vienna who can claim to have had the privilege of learning at the feet of the great teacher of surgery, but Billroth's disciples and admirers are to be found in the chairs of medicine and surgery of every country in the world and not only in Austria and Germany. Full particulars of the centenary celebrations can be obtained from the Akademie der Wissenschaften in Wien (Universitätsplatz 2, Vienna I.).

MUNICIPAL SUN LOUNGE.—What is described as the first municipal sun lounge to be built in Great Britain was opened at Torquay on Feb. 20th by Dr. Leonard Hill, F.R.S. Ninety-five feet long, it faces due south and has walls and a roof of vitaglass.

STIRLING ROYAL INFIRMARY.—By the opening of the new maternity block, the extensions to this hospital, which have cost £108,000, have been completed. There are now 20 beds in this part of the institution, provided one-half by the Stirling Town Council and one-half by the Central District Committee of Stirling County Council.

WORK OF ST. GEORGE'S HOSPITAL.—Speaking at the annual general meeting of the Ladies Association at St. George's Hospital last week, Sir Crisp English, the senior surgeon, said that the hospital averaged about 500 night emergency operations a year. There are 4000 operations annually and four new operating tables are badly needed. There had been 180,000 out-patients and 24,000 in-patients in the electrical massage department. Without having any definite research endowment, the hospital was doing cancer research in a quiet way in the course of clinical work, and influenza research was being pursued.

SCOTTISH HOSPITALS.—The report by the managers of the Glasgow Royal Infirmary shows a shortage of £10,127 on the year's working, and for the first time for many years it has been necessary to borrow money from the bank. There were 16,488 in-patients under treatment during the year, the average number resident daily being 783·8 and the average period of residence 17·4 days. A total of 97,258 outdoor patients were treated in dispensaries and other departments. The total ordinary revenue for the year was £87,815, and the total ordinary expenditure £122,178. 130 beds and 11 cots are now endowed and the restricted capital funds amount to £295,830. Through the generosity of Mr. William C. Teacher, of Cive, Dumbartonshire, who gave £10,000 for the purpose, a University lectureship in bacteriology at the Royal Infirmary has been founded.—Aberdeen Royal Infirmary's annual report refers to the numerous cases resulting from motor accidents, which have created a two-fold problem by the expense they involve and by the prolonged occupation of beds that are required for other purposes. The decision of the Students' Representative Council to suspend their gala week in 1929, the report continues, is regretted. While fully recognising the stupendous amount of time and labour which the gala involves, the directors say that they cannot but view with concern an interruption in what has come to be regarded as a regular and considerable source of revenue for the infirmary. They therefore venture to hope that some time this year the students may find it possible to do something which will provide a contribution to the infirmary funds, and maintain continuity of the methods of organisation and administration which have hitherto proved so successful. The total number of patients admitted to the infirmary last year was 31,115, an increase of 2647 over those admitted in 1927.

DRUGS FOR INSURED PERSONS: APPOINTMENT OF AN ADVISORY COMMITTEE.

IN order to assist insurance committees to proceed on uniform principles in dealing with questions of difficulty as to the definition of drugs and medicines for the purposes of medical benefit under the National Health Insurance Acts, the Minister of Health has now appointed an advisory committee. This committee is to consider and report to the Minister upon questions which he refers to them. Certain questions which are known to have occasioned difficulties of definition in the past have already been referred to it; any further proposal should be submitted in the first instance to the Medical Department of the Ministry accompanied by full particulars of the circumstances in which a difficulty of definition has arisen. The membership of the committee is as follows: Dr. Dudley G. Greenfield (chairman), Mr. T. Allsop, J.P., Dr. J. J. Day, Sir Walter Fletcher, F.R.S., Mr. J. E. French, M.P.S., Dr. A. F. Heald, Mr. W. Gill Hodgson, Mr. E. Lewis Lilley, F.R.C.S., Mr. F. Llewellyn-Jones, LL.B., Mr. G. A. Mallinson, Mr. Edwin Potts, B.Litt., Mr. Philip F. Rowsell, F.C.S., Mr. Thomas Tickle, F.I.C., with Miss E. M. R. Russell (secretary). All communications should be addressed to the secretary of the Advisory Committee on the Definition of Drugs, Ministry of Health, Whitehall, London, S.W. 1.

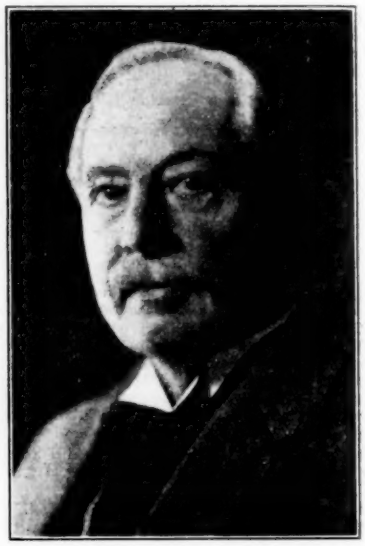
Obituary.

GEORGE NEWTON PITT, O.B.E., M.D. CAMB., F.R.C.P. LOND.,

CONSULTING PHYSICIAN TO GUY'S HOSPITAL.

WE much regret to announce the death of Dr. Newton Pitt, which occurred at his house, Southdene, Walton-on-Thames, on Friday, Feb. 22nd, in the seventy-fifth year of his age.

George Newton Pitt was born in London in 1853, the eldest son of the late Mr. George Pitt, of Sutton, Surrey. He was educated at Christ's College, Finchley, whence he proceeded with a scholarship to Clare College, Cambridge, and after a distinguished career as a student graduated in 1876 as tenth wrangler, being duly elected Fellow of his college later. Deciding to enter the medical profession, he joined the medical school at Guy's Hospital in 1878, took the M.R.C.S. Eng. in 1881, graduated in medicine at Cambridge, where he proceeded to the M.D. in 1884, the same year in which he took the M.R.C.P. Lond. After post-graduate work in Vienna he was elected assistant physician at the East London Hospital for Children, and in 1887 assistant physician to Guy's Hospital, after a short period as medical registrar. As assistant physician, and ten years later as full physician, Pitt remained on the staff of the hospital his full term, being elected consultant physician just before the war. His long and intimate association with the hospital is well brought out in the following note from his friend and colleague, Sir William Hale-White:—



DR. NEWTON PITT.
Photograph: Elliott & Fry.

"George Newton Pitt came to Guy's in 1878 with a considerable mathematical reputation from Cambridge. He had already done his anatomy and physiology and so he passed at once into the wards and held all the usual appointments, including that of house physician. The members of the staff for whom he worked most and who chiefly attracted him were Howse and Moxon, both then at the height of their notability as great teachers. Pitt became medical registrar and in 1887 was appointed assistant physician at the same time as Sir Cooper Perry and Leonard Charles Wooldridge. He remained on the active staff until he retired under the age limit of 60 shortly before the war. He had not been long among his fellow medical students before they discovered that there had come among them a very lovable man; he made many friends, perhaps the closest was that remarkably brilliant man Ryle, the brother of the late Bishop Ryle, Dean of Westminster, and the father of Dr. Ryle, now on the staff at Guy's. He and Pitt lived together for a time, and it was a real pleasure to spend an evening with them.

You could not help being fond of Pitt, his kindness, his equanimity, and serenity compelled your affection. If you were ill he came to see you and you felt encouraged by his visit. His feeling for the unfortunate and his desire to help them actively was shown by the assiduity and industry with which, for many years, he gave endless time and patience while carrying out his duties as hon. secretary to the Royal Medical Benevolent Fund. Waves of troubles, whether his own or those of others, passed over him, leaving him uninjured and just as fresh as ever to throw his best energy into repairing the mischief. A few years ago he suffered severely and for a long while from sciatica, but to his visitors he was always cheerful, and likewise in his fatal illness it was the same; he was pleased to see a friend and optimistic about himself. He was one of the few who was never known to have an enemy, and the more you saw of him the more you admired in him the nature that never sought its own advantage, was always generous in its appreciation, indefatigable in its service for others. The same characteristics came out in Pitt the physician; he took infinite labour to discover what was the matter with his patients, in his desire to relieve them no trouble was too great, in the same way he was unwearying in the pains he took to teach the students attached to him."

Newton Pitt's connexion with the Royal College of Physicians of London was an important one. Elected F.R.C.P. in 1889, he was Goulstonian lecturer in 1890, Bradshaw lecturer in 1910, and senior censor in 1918. He acted also as examiner in medicine at the Conjoint Board, as well as for the Universities of Cambridge and London at various times. The subject of the Goulstonian lectures was Cerebral Lesions, and in the series of three discourses the lecturer summarised very clearly contemporary knowledge upon the fatalities of ear disease, the manifestation of meningitis, cerebral abscess, and sinus thrombosis having origin other than in disease of the ear, and the signs and symptoms of cerebral embolism and aneurysm, as recorded in the Guy's Hospital Reports. In the Bradshaw lecture, delivered 20 years later, he discussed fully the results of bronchial obstruction, and again showed his high ideal of the responsibilities of the hospital physician by basing his observations and teaching upon the Guy's Reports. He was an infrequent writer, but in a contribution to Allbutt and Rolleston's System, upon right-sided valvular lesions of the heart, the same anxiety to base his observations upon the records of Guy's Hospital and other institutions, where the evidence could be confirmed or challenged, is apparent.

Another side of his work was his charitable energy exerted on behalf of the less fortunate members of the medical profession. For many years he was secretary of the Royal Medical Benevolent Fund, and of his labours in this cause the treasurer of the Fund, Sir Charters Symonds, writes as follows:—

"The Royal Medical Benevolent Fund has lost by the death of Dr. Newton Pitt not only a warm supporter but an untiring Hon. Secretary. During the 15 years he acted in this capacity his interest never flagged, and his wide knowledge of the various charitable agencies which might contribute to the necessities of those with whom he was immediately concerned proved of great value. The work of investigating the applications for relief fell upon him and involved not unfrequently personal inquiries as well as correspondence in order to confirm various statements or obtain additional information. His wise discrimination in these inquiries, and the manner in which the cases were presented, enabled the committee to adopt his decisions with confidence. It will be readily understood that the investigation of about a dozen new applications each month, and the review of some 20 to 30 old cases, involved considerable labour. Dr. Pitt, however, never failed, nor was he ever more informing and accurate than at the last meeting he attended a week before his death. Not only did he know the history of the many beneficiaries receiving grants, but also that of the numerous annuitants. In financial matters his mathematical acquirements (he was a Cambridge Wrangler) and logical outlook proved of essential service. In the larger questions of policy his clear vision and long views guided the Fund through many difficulties. The growth in the activities of the Fund during his secretaryship will be appreciated when it is mentioned that when he took over the duties there was one part-time secretary, while at present there are three clerks constantly at work under a salaried secretary, and the number of grants made and of annuitants benefited has risen proportionally.

When the War Emergency Fund was started by the late Dr. Samuel West in 1916, the duties of secretary devolved upon Dr. Pitt, and into this branch of the work he threw his energy and interest, interviewing with other members of the special committee many of the applicants, promoting the education of some 150 boys and girls, and enabling many practitioners to resume their practices or to find new positions. One of his last acts was to wind up this Fund, having taken a leading part in the administration of the £30,000, two-thirds of which had been raised by the profession, the remainder being a contribution from the National Service Fund. It will not be easy to find another possessing such abilities and such devotion. His unfailing courtesy, his unruffled temper, his fine sense of comradeship, his appreciation of the views of others, will long be remembered by those associated with him in his charitable work."

EDWARD LEICESTER ATKINSON, D.S.O., M.R.C.S. ENG.

Surgeon-Captain E. L. Atkinson, R.N., who died on Feb. 20th and was buried at sea, was a man whose life brought credit to his profession.

The son of Mr. and Mrs. E. L. Atkinson, of Trinidad, he was born in 1882 and was educated at Forest School. From there he entered St. Thomas's Hospital, where he held house appointments after qualifying in 1906. As a student he already showed the toughness of character and physique that distinguished his later career, and he gained the United Hospitals light-weight boxing championship in 1905. On entering the Royal Navy he passed out top of his batch at Haslar and was awarded a medal.

In 1910 Atkinson joined Captain Scott's Antarctic expedition. During the long and arduous voyage south in the *Terra Nova* he became the close friend of Captain L. E. G. Oates, a circumstance that may be recorded as a hall-mark of high honour. Throughout the expedition he distinguished himself as a man who sought arduous duties for the satisfaction they brought him. In the second autumn, when the *Terra Nova* returned to the base at Mount Erebus, expecting to bring home the whole expedition, two sledging parties were missing. The first was the Geographical Pole Party under Captain Scott, the other the Northern Party, who were away sledging in the direction of the magnetic pole. To avoid the possibility of entanglement in the winter ice, it was needful for the ship to return to New Zealand, and Atkinson was left at the base in charge of a party to spend the winter there and render assistance to any that might have survived. Those who had gone off in the hope of finding Scott and his companions returned without news of them. Meanwhile Atkinson made a strenuous attempt to succour the Northern Party but was baffled by the ice conditions. After spending the winter at the base, and in the belief that neither of the missing parties would have survived the winter, Atkinson led his party off to search for the bodies and records of Captain Scott and his companions. He found the bodies of Captain Scott, Dr. Wilson, and Lieutenant Bowers a hundred miles away to the south. Eighteen miles further Captain Oates had made his historic sacrifice in walking out to his death in a blizzard to save his companions. Failing to find his body, Atkinson

erected a cairn to his memory, marked with the now classical epitaph: "Hereabouts died a very gallant gentleman."

Atkinson's career during the war was exactly in accordance with his character. After service with the Grand Fleet he went with the Royal Naval Division to Gallipoli, and later served with a howitzer brigade in France, where he was badly spattered in the face by a bursting shell, partly losing the sight of one eye. After this he served in H.M.S. *Glatton* at Jutland. When the ship was torpedoed and sinking a fire broke out. Atkinson went below and brought up a man. He was almost blinded, but made his way down again, bringing another man up. He then became unconscious. This act of his was not known until his commanding officer, who was himself wounded, long afterwards collected the evidence and recommended him to the notice of the Admiralty. He was awarded the Albert Medal and the D.S.O.

In March, 1920, Atkinson won the Chadwick gold medal and prize given once in every five years for special work in promoting the health of the Navy and Army. He had done good scientific work in helminthology and bacteriology, having a clear and exceptional scientific mind, which might have gained him distinction in research if his health had not been severely damaged by the hardships and wounds he had suffered. His death at sea was a fitting circumstance and one that he himself would have desired.

LAURA STEWART SANDEMAN, M.D. EDIN., J.P.

THE death of Dr. Laura Sandeman last week, as the result of influenzal pneumonia, has cast a gloom over the city of Aberdeen in which she was described without exaggeration as the best-loved woman. The eldest daughter of a large Perthshire family, she was already familiar with public work before taking a medical course at Edinburgh University. Qualifying in 1903, she settled in Aberdeen and soon became family physician to the east end of the city, whilst losing no opportunity of social or public health service. Having started in her teens to inaugurate a sewing class and savings bank in her native village, she was the first to see the need for a centre in the poor and crowded district of Torry, at which mothers could attend and bring their babies for advice and treatment, and as time went on her advocacy of child welfare possessed her more and more, and she was widely in request as a lecturer on this and kindred subjects. At the outbreak of the late war Dr. Sandeman brought herself only after a struggle to depute her work in Aberdeen to others and to join the staff of the Scottish Women's Hospital in France, which she left to become controller of medical services to Queen Mary's Army Auxiliary Corps, her organising ability when given free scope proving to be of a high order. The same ideal of citizenship entered into her political work, for on her last appearance on the political platform she urged her fellow-women to make use of their suffrage, to whichever party they adhered. Twice she stood without success for North Aberdeen, on the former occasion returning from a continental holiday to canvass the constituency. Her death has called out on all sides testimonies to her ability and singlemindedness which may be summed up in the words of a colleague: "She had qualifications for public service of the highest order; she was in addition a woman who inspired affection and who made richer the lives of all who knew her." Dr. Laura Sandeman's death at 67 years of age makes the first gap in a family circle which includes Mr. James Sandeman, K.C., Sheriff of Perth, and Mr. A. N. S. Sandeman, M.P. for Middleton and Prestwich.

DR. LAURA SANDEMAN.
Aberdeen Press and Journal.

DENIS WALSHE, M.D. N.U.I., J.P.

Dr. Denis Walshe, whose death occurred last week at Craiguenamanagh, Co. Kilkenny, in his eighty-fourth year, was one of the most highly respected general practitioners in Ireland. A student of the old Catholic University in Dublin, he took the licence of the Royal College of Surgeons of Edinburgh in 1869, and of the King and Queen's College of Physicians of Ireland in 1871. In 1915 the honorary degree of M.D. was conferred on him by the National University of Ireland. In his younger days he practised for several years in England, but over 40 years ago he returned to his native country and was appointed medical officer of the Graigue dispensary district. He also held for many years the office of coroner for the county of Kilkenny. Engaged in a busy country practice, Dr. Walshe kept his mind open to the advances of medical knowledge, and he was regarded both by his colleagues and the public as a sound and wise practitioner. It is more than 50 years since he first contributed to our own columns a note on ligature of the femoral artery in two cases under his care, the material being the newly introduced carbolised catgut. He interested himself in public affairs, and had been chairman of the County Kilkenny Insurance Committee since its foundation in 1912. He was active in the various medical organisations, in which his wise judgment carried great weight. For many years he represented the South-Eastern of Ireland Branch on the Council of the British Medical Association. His geniality, his hospitality, and his sturdy upright character gained him respect and affection everywhere. To his colleagues he was a loyal and helpful friend, to his patients a trusted and wise adviser.

JOHN LOGAN STEWART, M.B. GLASG., D.P.H.

Dr. Logan Stewart, who died of pneumonia in Manchester on Feb. 20th, in his fiftieth year, was consultant tuberculosis officer to the Lancashire County Council. He graduated at Glasgow M.A. in 1900 and M.B., Ch.B. in 1905, adding the D.P.H. Camb. three years later. He then entered the service of the council as medical inspector of schools, and in July, 1913, he was appointed to supervise the tuberculosis service in the south-eastern section of the county (with a present population of 370,000), with a chief dispensary at Ashton-under-Lyne and five branch dispensaries in neighbouring towns. Dr. Stewart was the first member of the county tuberculosis staff to undertake his own X ray work, and this he developed to a high degree of efficiency. Several of his contributions may be read in the annual reports on tuberculosis work in Lancashire, and his views on the value of X ray work in a tuberculosis dispensary were set out in an article which appeared in *Tubercle* in 1927. He also did pioneer work in the treatment of tuberculosis by artificial light, demonstrating its use particularly in the treatment of lupus and adenitis with abscess formation and skin involvement. Latterly he had devoted much time to the relation of tuberculosis and silicosis, his preliminary report being published in the current issue of the *British Journal of Tuberculosis*.

Dr. G. Lissant Cox writes: "In the last 10 or 15 years the tuberculosis service in the North of England has had two exceptionally gifted clinical tuberculosis officers—the late Dr. W. C. Rivers, district tuberculosis officer of the West Riding County Council, and John Logan Stewart. Stewart was a

typical Lowland Scot. Austere yet kind, bent but not broken by the death of his wife some three years ago, engrossed in his work, possessed with a sure judgment and an entirely unselfish nature; these qualities made him loved and respected by all his colleagues, patients, and the doctors who so frequently consulted him. Visitors from many lands went to Ashton-under-Lyne; all returned impressed with Stewart's work. But this it was which made him stand out above the crowd: Woven into every part of his being and controlling his unceasing work was a fierce yet sane sympathy with the sufferer from tuberculosis. For such sufferers he lived, and for them he died."

Dr. J. R. Kerr writes: "The passing of John Logan Stewart will be regretted with particular poignancy by his old classmates of Glasgow University. One remembers the steadfast honesty of his mind and the most lovable gentleness of his manner. Whatever Stewart set his hand to he did with all his might. Many will miss his counsel as a tuberculosis specialist, as an expert in the radiology of the chest, or in the theory and practice of ultra-violet ray treatment. But all who knew him will cherish the memory of his sterling character and of his full-hearted devotion to the cause of the suffering."

WALTER AUBREY KIDD, M.D. LOND., F.R.S. EDIN.

WE regret to announce the death of Dr. Walter Aubrey Kidd, who died on Thursday, Feb. 21st, at Cape Town, in the seventy-sixth year of his age. A son of the late Dr. Joseph Kidd, the well-known physician of Blackheath, and the brother of Dr. Percy Kidd and Mr. Frank Kidd, he was educated at Uppingham, whence he proceeded to the medical school at Guy's Hospital. Here he had a very successful career, graduating at the University of London as M.B., B.S. in 1876 with honours and the gold medal for forensic medicine. He proceeded to the M.D. in the following year, having immediately after his residence at Guy's Hospital begun to practise medicine at Blackheath. Here by individual merit as well as family connexions, he enjoyed a very large practice, from which he had recently retired.

Walter Kidd was an original and observant student of the problems of heredity, and his communications to our pages on this and allied subjects were always of interest, while he was the author of several thoughtful monographs having similar scope, for example, an essay on Use-Inheritance, and two such books, entitled the "Direction of Hair in Animals and Man," and the "Sense of Touch in Mammals and Birds."

GEORGE VERE BENSON, M.A. CAMB., M.R.C.S. ENG.

AFTER a long period of ill-health Dr. G. V. Benson died at Lewes on Feb. 21st at the age of 81. He was a familiar figure in East Sussex, inasmuch as for 28 years he was coroner for what is known as the Lewes district, which comprises the greater part of the administrative county of East Sussex, and also Eastbourne. He was appointed to this office in 1899 by the casting vote of the then chairman of the county council, who wanted to see a medical man holding the coronership instead of the customary solicitor. Dr. Benson had at that time had several years' experience of the work, having been for five years deputy coroner for the western division of Middlesex. In East Sussex he is said to have conducted at least 6000 inquests, and when Eastbourne became a county borough entitling it to elect its own coroner, the corporation decided to continue his appointment as showing appreciation of his services. He retired in 1927.

Dr. Benson was born in Dublin, his father being Dr. Charles Benson of that city. He was educated at Trinity College, Dublin, and Downing College, Cambridge. At Cambridge he was placed as a wrangler in the mathematical tripos, after which, embarking on the study of law, he was called to the Bar in 1878. Some years later he decided to study medicine, and qualified in 1893. From 1908 to 1910 he was vice-president of the Coroners' Society of England and Wales. A somewhat prolific writer, he contributed, inter alia, to the "Encyclopædia of the Laws of England," and "The Dictionary of National Biography."

Dr. Benson married a daughter of David Bateman Thornton, by whom he had one son.

Miss HELEN HUNTER BAILLIE, who died in London on Feb. 11th in her eighty-sixth year, was the last of the third generation in descent from Dorothea, the sister of John Hunter, "the founder of scientific surgery" and the creator of the museum of the Royal College of Surgeons of England. Of the nine brothers and sisters of John Hunter, only Dorothea married, and the children of John Hunter all died without issue. The fourth generation from the Hunters is now represented by the children of her sisters, Mrs. Oliver and Mrs. Maconechy. Of the former there are four living—the Rev. Robert Baillie, Helen, Dorothy, and Angela Oliver. The eldest, Rachel, died a martyr to devotion to hospital work. The second son, Matthew M. B. Oliver, F.R.C.S., well known as an ophthalmic surgeon, died in 1926. Of the three daughters, Muriel, Sophia, and Joanna, of Mrs. Maconechy, the eldest, Muriel, married Thomas B. Jobson, M.D., of Netherwood, Guildford. Thus the fourth generation is represented by but seven. The fifth generation is reduced to four, the one son, Patrick Hunter Jobson, and three daughters of Mrs. Muriel Jobson.

Miss Hunter Baillie's devotion to medicine and especially to "the College" was great. With loving care she guarded the pictures, relics, and letters of the Hunters, William and John, and finally placed them in their present resting place under the care of Sir Arthur Keith at the Royal College of Surgeons. Until a year or two ago she attended the Hunterian Orations and much enjoyed the courtesy with which she was received. She had a rare gift of letter writing, and corresponded regularly with her many friends up till the last. A woman of great personality, in the opinion of Sir Arthur Keith she inherited to a remarkable degree the features of body, face, and mind of her distinguished ancestor. At the Hunter Centenary Dinner of the College of Surgeons last year she was an honoured guest, and she was an honorary member of the Hunterian Society of London.

THE Chadwick Trustees invite "British subjects between 25 and 30 years of age, who have graduated in a British university or who can produce evidence of attainments or of intellectual equipment proving themselves to be capable of methodical study and research," to apply for two Travelling Scholarships of £400 each to enable the holders to travel abroad during one year to study methods adopted in other countries for the prevention of disease and the improvement of the public health. At the discretion of the Trustees the scholarships may be renewed for a second year. Before appointment a candidate will be invited to submit for the approval of the Trustees a scheme of study and an itinerary which it is proposed to follow. This opportunity is offered to male and female candidates.

ENDOWED DREADNOUGHT BEDS.—Sir George Hume, M.P., recently unveiled a bed in the Dreadnought Seamen's Hospital at Greenwich, the ninth which has been endowed by the Seamen's Hospital Aid Committee in memory of the men of the merchant service who died during the late war. The remainder of the 12 beds in the Northumberland Ward will shortly be endowed through the efforts of the Aid Committee; the Millwall Football Club has promised to endow one of them.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY, March 5th.—8 P.M., PATHOLOGY. Laboratory Meeting in the Pathological Department, St. Thomas's Hospital Medical School, S.E. Communications: J. Bamforth: Two Cases of Purpura with Unusual Blood Pictures for which Splenectomy was Performed. R. J. V. Pulvertaft: Experiments with Streptococcal Toxin and Haemolysins. J. O. Oliver: Group Complement Fixation with the Gram-negative Cocci. 8.30 P.M., ORTHOPÆDICS. Discussion on the Diagnosis and Treatment of Low Back Pain. Opener: Dr. M. Smith-Petersen (Boston, U.S.A.). To be followed by Sir Robert Jones, and others.

WEDNESDAY.—5 P.M., HISTORY OF MEDICINE. Demonstrations: Mr. C. J. S. Thompson will show an unknown portrait of Ambroise Paré. The President will show other portraits of Ambroise Paré. Paper: Dr. R. Campbell Thompson: Assyrian Remedies for Diseases of the Ears. 5 P.M. (at the Middlesex Hospital, W.), SURGERY. (Tea will be served at 4.30 P.M.) Paper: Prof. Sidney Russ: Some Principles of Dosage in Radium Therapy. A demonstration of cases treated with radium by the surgeons of the Middlesex Hospital will follow.

THURSDAY.—8.15 P.M., TROPICAL DISEASES. Paper: Mr. T. W. M. Cameron: Some Parasitic Problems in the British West Indies.

FRIDAY.—5.30 P.M., CLINICAL. (Cases at 5 P.M.) Cases will be shown demonstrating diseases of the endocrine glands. 5 P.M., OPHTHALMOLOGY. Clinical Meeting at the University College Hospital, Gower-street, W.C. (Tea at 4.30 P.M.)

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

WEDNESDAY, March 6th.—9 P.M., Dr. H. W. Barber: Dermatology in Relation to Other Branches of Medicine. (Third Lettsomian Lecture.)

HUNTERIAN SOCIETY.

MONDAY, March 4th.—9 P.M. (in the London Mansion House). Prof. A. W. Sheen: Some Aspects of the Surgery of the Spleen, illustrated by lantern slides. (Hunterian Oration.)

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

MONDAY, March 4th.—8 P.M., Sir Thomas M. Legge: Thirty Years' Experience of Industrial Maladies. (Third Shaw Lecture.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.

TUESDAY, March 5th.—5 P.M., Dr. J. Graham Forbes: Past and Present Diphtheria in England and Wales with special reference to the London Metropolis. (Last Milroy Lecture.)

THURSDAY.—5 P.M., Prof. E. B. Verney: Polyuria. (First Goulstonian Lecture.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY, March 4th.—5 P.M., Mr. C. E. Shattock: Specimens Illustrating Diseases of the Tongue and Lips.

FRIDAY.—Prof. Sir Arthur Keith: The Anatomy and Pathology of "Diverticulitis."

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, March 4th to SATURDAY, 9th.—MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W. Mon., at 5 P.M., Lecture by Mr. Herbert J. Paterson: Pitfalls in Radiology.—ST. MARK'S HOSPITAL, City-road, E.C., on Thurs., at 5 P.M., Demonstration by Mr. E. T. C. Milligan: Diseases of the Rectum.—WELLCOME MUSEUM OF MEDICAL SCIENCE, 33, Gordon-street, W.C., Wed., at 4 P.M., Demonstration by Dr. S. A. Henry: The Industrial Cancers and their Importance in the Investigation of the Problem of New Growth.—The above are free.—ST. JOHN'S HOSPITAL, Leicester-square, W.C. Post-graduate course in Dermatology, every afternoon, and some evenings.—HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C. Post-graduate course in Diseases of Children, mornings only. Lectures, demonstrations, operations. Further particulars from the Secretary, Fellowship of Medicine.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.

WEDNESDAY, March 6th.—4 P.M., Cases will be demonstrated by the Honorary Staff. Tea will be served at 3.45 P.M.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, March 5th and THURSDAY.—5 P.M., Dr. A. C. Roxburgh: Cutaneous Syphilis.

NATIONAL HOSPITAL, Queen-square, W.C.

MONDAY, March 4th.—12 noon, Dr. Greenfield: Pathology of Nervous System. 2 P.M., Dr. Riddoch: Out-patient Clinic. 3.30 P.M., Dr. Adie: Progressive Muscular Atrophies.

TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Grainger Stewart: Neurosyphilis.

THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Riddoch: Postures and Gaits.

FRIDAY.—12 noon, Dr. Purdon Martin: Anatomy and Physiology of Nervous System. 2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Symonds: Neurological Complications of Specific Fevers.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, March 4th.—2.30 to 5 P.M.: Medical, Surgical, and Gynæcological Clinics. Operations.

TUESDAY.—2.30 to 5 P.M.: Medical, Surgical, Throat, Nose and Ear Clinics. Operations.

WEDNESDAY.—2.30 to 5 P.M.: Medical, Skin, and Eye Clinics. Operations.

THURSDAY.—11.30 A.M.: Dental Clinics. 2.30 to 5 P.M.: Medical, Surgical, and Ear, Nose and Ear, Nose and Throat Clinics. Operations.

FRIDAY.—10.30 A.M.: Throat, Nose and Ear Clinics. 2.30 to 5 P.M.: Surgical, Medical, and Children's Diseases Clinics. Operations.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.

TUESDAY, March 5th.—3.15 P.M., Dr. C. C. Beatty: Hæmaturia.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, March 7th.—4 P.M., Dr. Nabarro: Points in Connexion with Tuberculosis.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

MONDAY, March 4th, WEDNESDAY, and FRIDAY.—5.30 P.M., Dr. A. Maitland Ramsay: The Eye in General Medicine.

UNIVERSITY COLLEGE, Gower-street, W.C.

MONDAY, March 4th.—5 P.M., Mr. P. Eggleton: The Chemistry of Muscle Contraction.

TUESDAY.—5.30 P.M., Prof. Karl Pearson: The Heredity of Albinism.

FRIDAY.—5.30 P.M., Dr. J. Howard-Jones: The Hygiene of the Mercantile Marine. (Third Lecture.)

NATIONAL COUNCIL FOR MENTAL HYGIENE, 78, Chandos House, Palmer-street, S.W.

WEDNESDAY, March 6th.—5 P.M. (at the Medical Society of London, Chandos-street, W.), Dr. Bernard Hart: The Minor Mental Disorders of Everyday Life.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.

TUESDAY, March 5th.—4.15 P.M., Dr. D. E. Core: Dreams.

FRIDAY.—4.15 P.M., Dr. F. E. Tylecote: Demonstration of Medical Cases.

ANCOATS HOSPITAL, POST-GRADUATE LECTURES, Mill-street, Manchester.

THURSDAY, March 7th.—4.15 P.M., Dr. Kletz: Diseases of the Gall-bladder.

UNIVERSITY OF MANCHESTER (Chemistry Theatre).

WEDNESDAY, March 6th.—5 P.M., Prof. A. V. Hill: Maintenance of Life and Irritability in Isolated Animal Tissues. (Ludwig Mond Lecture.)

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.

FRIDAY, March 8th.—3.30 P.M. (at the Royal Hospital), Mr. F. Wilson: Surgical Cases.

Appointments.

HOWELL, T. J., M.D. Edin., has been appointed Assistant Ophthalmic Surgeon to the Royal Victoria Hospital, Folkestone.

MAURICE-WILLIAMS, H. C., L.R.C.P. Lond., M.R.C.S., D.P.H., Deputy Medical Officer of Health, County Borough and Port, Southampton.

SOURASKY, A., F.R.C.S. Edin & Eng., Ophthalmic Surgeon to Out-patients, Hampstead General and North-West London Hospital.

St Thomas's Hospital: THWAITES, J. G., M.B., B.S. Lond., JONES, IVOR, M.B., B.S. Lond., PICKERING, G. W., M.R.C.S., L.R.C.P. Lond., BELL, A. D. C., M.R.C.S., L.R.C.P. Lond., STEWART, H. H., M.B., B.Chir. Camb., BARRETT, N. R., M.B., B.Chir. Camb., DRAKE-LEE, W. G., M.B., B.Chir. Camb., and STORRS, G. S., M.B., B.Chir. Camb., Casualty Officers and Resident Anæsthetists; SAVILLE, J. E., M.B., B.S. Lond. MORTON, T., M.B., B.S. Lond., ELKINGTON, J. ST. C., M.B., B.Chir. Camb., and TROWELL, H. C., M.B., B.S. Lond., Resident House Physicians; FARMER, A. P., M.B., B.S. Lond., Resident House Physician (for Children); HARPER, R. M. J., B.M., B.Ch. Oxf., HILL, R. A., M.B., B.S. Lond., REID, R. W., M.B., B.S. Lond., STEVENS, T. R., B.A., M.B., B.Chir. Camb., COTTON, O. J. C., M.R.C.S., L.R.C.P. Lond., WILCOX, R. N., M.R.C.S., L.R.C.P. Lond., and GUSTERSON, F. R., M.R.C.S., L.R.C.P. Lond., Resident House Surgeons; GEORGE, J. B., M.R.C.S.,

L.R.C.P. Lond., and GILLETT, F. H., M.B., B.Chir. Camb. Obstetric House Physicians; DAVIES, T. E., M.B., B.S. Lond., B.Sc., M.B., B.Ch. Wales., and PALMER V. E., M.R.C.S., L.R.C.P. Lond., Ophthalmic House Surgeons; DRACUP, R. C., M.B., B.S. Bombay, D.P.H., D.T.M. & H. Camb., CLIFTON, F., M.R.C.S., L.R.C.P. Lond., MARRINER, H. I., F.R.C.S. Edin., MARKS, D. P., B.A., M.B., B.Chir. Camb., SEMPLE, J. E., M.R.C.S., L.R.C.P. Lond., NEILSON, D. F. A., F.R.C.S. Eng., FITZGIBBON, G. M., M.B., B.S. Lond., NEGUS, T. H., M.R.C.S., L.R.C.P. Lond., WHEATON, C. E. W., M.R.C.S., L.R.C.P. Lond., BARRON, H. T., M.D. Lond., BEVAN, A., M.D. Lond., HARRISON, G. F., M.R.C.S., L.R.C.P. Lond., RUSSELL, A. S. D., M.R.C.S., L.R.C.P. Lond., LLOYD WILLIAMS, P., M.R.C.S., L.R.C.P. Lond., L.D.S., PENROSE, L. S., M.B. Camb., PURVIS, R., M.R.C.S., L.R.C.P., VAUGHAN-BRADLEY, J., M.R.C.S., L.R.C.P. Lond., NICORY, C., M.R.C.S., L.R.C.P. Lond., LART, J. F. V., M.R.C.S., L.R.C.P. Lond., LANKESTER, L. W. A., M.R.C.S., L.R.C.P. Lond., MAYNARD, R. A., M.R.C.S., L.R.C.P. Lond., MORTON, A. D., M.R.C.S., L.R.C.P. Lond., TAYLOR-YOUNG, H. S., M.B., B.Chir. Camb., HALLETT, D. B. L., M.A., B.M., B.Ch. Oxf., HOWE, E. G., M.B., B.S. Lond., D.P.M. Lond., MCLAUGHLIN, A. I. G., M.B., Ch.M. Sydney, GRIFFITH, D. R., M.R.C.S., L.R.C.P. Lond., SIMONDS, W. H., M.B., B.Chir. Camb., WALTON, L. H. F., M.R.C.S., L.R.C.P. Lond., WALLIS, A. S., M.R.C.S., L.R.C.P. Lond., BROCKMAN, E. P., M.B., M.Chir. Camb., GIBSON, J. M., M.R.C.S., L.R.C.P. Lond., HAMLIN, H. S., M.R.C.S., L.R.C.P. Lond., JOBBINS, C. G., M.R.C.S., L.R.C.P. Lond., ALBURY, M., M.B., B.Chir. Camb., LIMBERY, I. B., M.R.C.S., L.R.C.P. Lond., WILLCOX, G. W., M.B., B.Chir. Camb., RICHARDS, W. G., M.R.C.S., L.R.C.P. Lond., and LEVY, A., M.R.C.S., L.R.C.P. Lond., Chief Assistants and Clinical Assistants.

Certifying Surgeons under the Factory and Workshop Acts: GRAHAM-YOOLL, R. W., M.B., Ch.B. Edin. (West Linton, Peebles); GREGORY, C. H., M.D., B.Chir. Camb. (Rugby); STEPHEN, W. S., M.B., Ch.B. Glasg. (Drummore, Wigtown); WATTHEWS, J. W., M.B., Ch.B. Edin. (Holmfirth, West Riding); WAKELEY, L. S. P., L.R.C.P. Lond., M.R.C.S. (Welwyn, Herts.).

Vacancies.

For further information refer to the advertisement columns.

Bedfordshire County Council.—Asst. M.O. £600. Also Asst. County Dentist. £450.

Birmingham, Ear and Throat Hospital.—2nd and 3rd. H.S. Each at rate of £150.

Birmingham, Queen's Hospital.—Anæsthetist, H.P.'s., H.S's., and Cas. H.S. Each at rate of £70.

Boodle Borough Hospital.—Jun. M.O. At rate of £125.

Brighton, Royal Sussex County Hospital.—Hon. Clin. Asst. to Ear, Nose and Throat Department.

Bristol General Hospital.—H.P.'s., H.S.'s., Res. Obstetric Officer. Also Cas. H.S. Each at rate of £80.

Bury Infirmary.—Third H.S. At rate of £150.

Calcutta, Presidency General Hospital.—Res. M.O. Rs.1,000.

Chester, East Lancs. Tuberculosis Colony, Barrowmore Hall, Great Barrow.—Asst. M.O. £250.

Chester Royal Infirmary.—H.P. At rate of £120.

Coventry and Warwickshire Hospital.—Res. H.P. £125.

Derby, Derbyshire County Sanatorium, near Chesterfield.—Res. Asst. M.O. £350.

Derby, Derbyshire Education Committee.—Asst. School M.O. £600.

Durham County Council Education Department.—Asst. Oculist. £600.

Durham County Council and Chester-le-Street Urban District Council.—District Tuberculosis M.O. and M.O.H. £700.

Essex, Administrative County of.—Asst. County M.O.H. £600.

Fulham Hospital, St. Dunstan's-road, Hammersmith, W.—Part Time M.O.

General Lying-in Hospital, York-road, Lambeth, S.E.—Res. M.O. At rate of £100.

Hastings, Royal East Sussex Hospital.—Pathologist. £200. Also M.O. to V.D. Department. £375. Also Hon. Asst. Physician.

Hospital for Sick Children, Great Ormond-street, W.C.—Part-time Jun. Cas. O. At rate of £150. Also H.S. and H.P. At rate of £100.

Hospital for Women, Soho-square, W.—Res. M.O. At rate of £100.

Hostel of St. Luke, 14 Fitzroy-square, W.—Res. M.O. £200.

Jerusalem, St. John Ophthalmic Hospital.—Sub-Warden.

Kensington, Fulham, and Chelsea General Hospital.—Hon. Phys. for Diseases of Skin.

King's College, Hospital Denmark Hill, S.E.—Hon. Anæsthetist.

Leeds, St. James' Hospital.—H.P. and S. £200.

Liverpool County Borough.—Jun. Asst. School M.O. £600.

Leicester, Royal Infirmary.—H.S., Res. Cas. O. Also H.P. Each £125.

Lewisham Hospital, High-street, S.E.—Radiographer. £300.

London Temperance Hospital, Hampstead-road, N.W.—Hon. Anæsthetist.

Manchester, Ancoats Hospital.—Res. Surg. O. Also H.S. At rate of £100.

Manchester Ear Hospital.—Non. Res. H.S. Also H.S. At rate of £150 and £120 respectively.

Manchester, Royal Children's Hospital.—Two Asst. M.O.'s. Each at rate of £150. Also Res. M.O. and Res. Surg. O. Each at rate of £125.

Manchester, Salford Royal Hospital.—H.S. to Orthopædic Department. Also H.S. Each at rate of £125.

National Hospital for Diseases of the Heart, Westmoreland-street, W.—Res. M.O. At rate of £150.

Northampton General Hospital.—Two H.S.'s. Also Asst. H.S. Each at rate of £150.

Nottingham, Bagthorpe Institution and Infirmary.—Res. Asst. M.O. At rate of £300.

Nottingham, Broadgreen Sanatorium.—Asst. Res. M.O. £250.

Oldham Poor Law Institution, Rochdale-road.—Res. Asst. M.O. £200.

Oxford, Pembroke College.—Theodore Williams Medical Scholarship. £100.

Paddington Green Children's Hospital, W.—Hon Physician. Also H.P. and H.S. Each at rate of £150.

Richmond, Surrey Royal Hospital.—Sen. H.S. Also Jun. H.S. At rate of £150 and £100 respectively.

Royal Free Hospital, Gray's Inn-road, W.—Cas. Officer. £150. Also Res. Anæsthetist.

Royal London Ophthalmic Hospital, City-road, E.C.—Surgeon to Ear, Nose and Throat Department.

Royal Society of Medicine, 1, Wimpole-street, W.—William Gibson Research Scholarship. £292.

St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—H.S. At rate of £75.

St. Thomas's Hospital, S.E.—Asst. Surgeon in Orthopædic Dept.

Salford, Ladywell Sanatorium.—Asst. Res. M.O. £350.

Shanghai Municipal Council, Public Health Department.—Asst. Pathologist. Taels 650 per mensem.

Swansea Hospital.—H.S. £150.

Tunbridge Wells and Counties General Hospital.—H.S. £160.

Walsall, General Hospital.—Sen. H.S., H.S. Also Jun. H.S. At rate of £200, £125, and £100, respectively.

West London Hospital, Hammersmith-road, W.—Hon. Asst. Anæsthetists.

Willesden General Hospital, Harlesden-road, N.W.—Clin. Asst.

Wolverhampton, Royal Hospital.—Two Cas. O.'s and Anæsthetists. Each at rate of £125.

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Hook Norton (Oxon.), Midsomer Norton (Somerset), Tadley and Baughurst (Hants), and Somercotes (Lincs).

Births, Marriages, and Deaths.

BIRTHS.

FORD.—On Feb. 22nd, at a nursing home, the wife of R. Kelson Ford, M.D., Fulwood Union Hospital, Preston, of a son.

JERWOOD.—On Feb. 18th, at Catmos, Wainwright-road, Altrincham, the wife of Bernard Jerwood, M.D., of a daughter.

LANGDALE-SMITH.—On Feb. 17th, the wife of Dr. H. G. Langdale-Smith, Stechford, Birmingham, of a daughter.

RICH.—On Feb. 15th, at Carlton House, Herne Hill, the wife of E. R. Rich, L.D.S. Eng., of a son.

ROLLER.—On Feb. 23rd, at a nursing home, to Caroline, wife of Roy E. Roller, M.C., of a daughter.

SHELDON.—On Feb. 22nd, at a nursing home, Southport, the wife of Harold Sheldon, M.D., 14, Albert-road, Southport, of a son.

WELLS.—On Feb. 15th, at Belvedere, Danbury, Chelmsford, the wife of Dr. J. Pascoe Wells, of a son.

MARRIAGES.

PLANT—HOLE.—On Feb. 13th, at St. Alban's Church, Streatham Park, S.W., Alfred Beresford Plant, M.R.C.S., L.R.C.P., to Marjorie Hole, elder daughter of Mr. and Mrs. R. Hole, of Sayers Common, Sussex.

DEATHS.

BATHE.—On Feb. 15th, at his sister's residence, "Bloomfield," Blackmore-road, Malvern, Allan Arthur Bathe, M.A., M.B. Oxf., in his 60th year.

BENSON.—On Feb. 21st, at St. Anne's-crescent, Lewes, George Vere Benson, M.A. Camb., Barrister-at-Law, M.R.C.S., L.R.C.P., late Coroner for East Sussex, aged 81.

BURRELL.—On Feb. 24th, Lionel Cottingham Burrell, M.A., M.B., M.R.C.S., L.R.C.P., of Arlaric House, Wansford, Peterborough, and late of Kew, Surrey.

KIDD.—On Feb. 21st, at Peak View, Rondebosch, Cape Town, Walter Aubrey Kidd, M.D., F.R.S.Ed., late of Blackheath, aged 76.

MOLONY.—On Feb. 20th, at Kerman, Persia, of enteric, E. F. Molony, M.R.C.S., L.R.C.P., Missionary, C.M.S.

PITT.—On Friday, Feb. 22nd, at Walton-on-Thames, of pneumonia, after five days' illness, George Newton Pitt, O.B.E., M.D., F.R.C.P., aged 75.

STEWART-SANDEMAN.—On Feb. 22nd, at Waverley-place, Aberdeen, of pneumonia, Laura Stewart-Sandeman, M.D., aged 67 years.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

THE LANCET: SUBSCRIPTION RATES.

INLAND	One Year	£2	2	0
	Six Months	1	1	0
	Three Months	0	10	6
ABROAD	One Year	2	10	0
	Six Months	1	5	0
	Three Months	0	12	6

Notes. Comments, and Abstracts.

THE BABIES' CLUB.

THE first annual general meeting of the Babies' Club was held at 29, Hyde Park Gate, lent by Lady Jones, on Feb. 26th. Mrs. William Piercy presided, and explained that the club, which is situated at 35, Danvers-street, Chelsea, came into being because a few mothers with young children, who had acted as helpers at infant welfare centres, desired to have the same sort of help and guidance in keeping their children well as was available for the poor. Mrs. Stanley Robinson said the founders of the club had realised that the trained medical assistance wanted by the mothers could not be obtained from their family doctors, who were too busy to give up the necessary time. It was decided to found a clinic where, on a single half-day in the week, an expert medical man would be able conveniently to deal with a number of healthy babies, and at the same time avoid encroaching on the domain of the family doctor. Any mother wishing to bring her child to the club had first to inform her family doctor of her intention and obtain his coöperation. The object of the club was the prevention of ill-health and cases of illness discovered by the medical officer were referred to the subscriber's family doctor. The first year's working showed a deficit of £458, but the membership had increased from 9 at the opening of the club in November, 1927, to 70 at the present date. It was hoped that the second year would see the club well on the way to being self-supporting. Each member paid five guineas a year, but a Samaritan Fund had been started to assist those who could not afford this sum.

Dr. H. K. Waller, medical officer of the club, said he found the same sort of minor ailments among the babies seen there as those found at an infant welfare centre in the East End; they were largely ailments due to faults of hygiene, ventilation, clothing, and the like. In some respects the poor mothers had gone ahead, and had remedied faults of management and feeding still found among the Chelsea babies by the time they reached the club. The East End mothers were experts; babies were their one great subject of discussion in their door-step parliaments, and they were quicker to note little points about their babies and to pick up hints offered than middle-class mothers. Dr. Waller had met with keen coöperation on the part of the nurses. English nurses were noted the world over for devotion to their charges, but there were a few rigid customs, in regard to such matters as clothing and ventilation, for example, which might be improved upon. The club was a centre for preventive medicine. It was not possible to prevent all illness, but it was hoped that, equipped with the armour of health, children would be better able to fight their inevitable illnesses.

Miss E. Raynham Smith, the matron, described her work as the first health visitor visiting in middle-class homes. By request she had started a class of instruction for expectant mothers, and applications for help in the most varied situations had been asked for and willingly given.

Sir Thomas Horder said this was a momentous and would indeed be an historical meeting if this first infant welfare centre for subscribing members proved to be a success. He was impressed by the fact that before starting the Babies' Club the committee had approached the Council of the British Medical Association in a spirit of courtesy. The B.M.A. must not be confused with the General Medical Council. It was an association of medical men existing largely to deal with questions in which the privileges and efficiency of general practitioners were concerned. The Babies' Club found that the Council of the B.M.A. was favourable, as far as any official organisation was able to be towards a new effort, and it gave the club its blessing. When, however, this blessing was presented for ratification to the Representative Body at the annual general meeting of the B.M.A. at Cardiff last summer, it was removed, though no ban was placed upon such clubs. Sir Thomas thought that he would sooner have the approval of the Council than of the Representative Body of the Association. In expressing his appreciation of the work done by the Babies' Club, he felt himself to be in good company, since the members had been addressed in their series of lectures by such leaders of the medical profession in matters of infant care as Dr. H. C. Cameron, Dr. David Forsyth, Dr. Allan Hamilton, Colonel R. McCarrison, Dr. Eric Pritchard, and Mr. George Waugh. This was an adventure, and a glorious adventure, and there were many other aspects of medicine, economics, and sociology which might have to be tackled on similar lines. Instinct did not carry people very far; education was essential. Sir Thomas Horder was impressed by the safeguards incorporated in the club's rules; against any infringements of the rights and privileges of general practitioners the family doctor was an essential part of the scheme. The results of the first year's working more than justified what the Committee had set out to do.

STANDARDISED YEAST.

YEAST is now recognised as a therapeutic agent, and its purity and activity should therefore be standardised. With this object the Standard Yeast Company, of Church-street, Chiswick, London, W., have laid down an elaborate plant for the production of pure yeast. The plant is a large one, capable of producing 15 tons in 24 hours; three chemists and five assistants control the process, and at each stage in the production the work is done under strict sanitary conditions. A single yeast-cell is picked out under the microscope, and placed in a Petri dish on agar-agar. The culture thus obtained is transferred to Erlenmeyer flasks containing sugar, thence again to tanks of increasing size containing sugar and phosphates. The largest tank has a capacity of 85,000 gallons. During the process the yeast is agitated by filtered air, the object being to separate the budding cells of the yeast from the parent, so as to quicken the growth. Subsequently the yeast is separated from the alcoholic wash (which, owing to the special process employed, contains only a negligible amount of alcohol), and is conducted through pipes to the pressing rooms. After passing through press filters it is ready to be made into tablets, which are sold under the name of Lyco Pure Yeast tablets. We understand that the beet-sugar used in feeding the yeast is carefully purified before use, and that during their formation and packing the tablets are not touched by the hands of the employees, every precaution being taken to avoid contamination. The whole of the plant is washed out once a week. An analysis of the tablets which has been supplied to us states that they consist entirely of pure pressed yeast, and weigh 0·305 g. each (about grs. 4½). Each tablet is stated to contain over 50,000,000 living yeast-cells and about the same number of dead cells. If yeast is to be given therapeutically it is certainly advantageous to use a pure culture, and the Standard Yeast Company's tablets appear to be satisfactory in this respect.

INFECTION OR INTINCTION.

To the Editor of THE LANCET.

SIR,—I shall be greatly obliged if those of your medical readers who are willing that their names shall be appended as signatories to the subjoined petition will signify the same to me as soon as possible by letter or postcard; also those who are willing to get petition forms signed. My profession awaits a lead from theirs.

"We, the undersigned registered medical practitioners, as Guardians of the Public Health, deem it our duty to petition all with whom the decision rests to discontinue the present method of administering the consecrated wine in the Holy Communion by means of a common cup as calculated to spread disease."

I am, Sir, yours faithfully,

S. CLAUDE TICKELL,
Vicar of Latton-cum-Eysey, Cricklade;
Hon. Secretary, Association for Avoidance of
Feb. 10th, 1929. Infection by Intinction.

A KING'S PHYSICIANS.

To the Editor of THE LANCET.

SIR,—Recent events have brought up in my mind a doggerel rhyme heard in childhood. Unfortunately I have it in a fragmentary condition and should be grateful if you could complete it and date it.

"Physicians attend His Majesty daily—
——, ——, Heberden, and Bailey;
All of them very excellent men—
——, ——, Bailey, and Heberden."

What two colleagues signed bulletins with Dr. Heberden and Dr. Bailey? And for what sovereign? The recollections of my grandmother, from whom I learned the verses, might go back to William IV., but I think the episode belongs to an earlier reign.—I am, Sir, your faithfully,

FRANCIS C. WALKER.
University of British Columbia, Jan. 28th, 1929.

THE COST OF SCIENTIFIC BOOKS.

IN the last number of his *Quarterly Review of Biology* (iii., 600) Prof. Raymond Pearl has an interesting analysis of the cost of biological books in 1928 based on the volumes sent to that journal for review. The average prices in cents per page, and the percentage difference from the 1926 figures, are:—

	Cents per page.	Difference from 1926.
England	1·09	—15 per cent.
United States	1·14	+ 2 ,,
Germany	1·48	+36 ,,
France	0·45	+29 ,,
British Government	1·26	—
U.S. Government	0·21	—32 ,,

Such data are no doubt subject to many qualifications, but it is evident that French books are very cheap and German books are dear. The day of cheap blue-books full of useful scientific information seems also to have passed in this country.